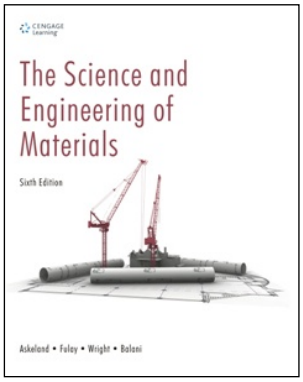
# RÉSUMÉ

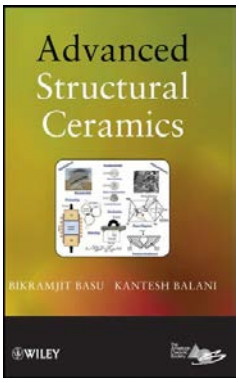
**Dr. Kantesh Balani, FASM, FNAE, FNASc**
Dean of Resources and Alumni
Yadupati Singhania Memorial Chair
Faculty Building, Room 413
Department of Materials Science and Engineering
Indian Institute of Technology Kanpur
Kanpur-208016, India
Email: kbalani@iitk.ac.in
Ph : +91-512-259-6194 (o)

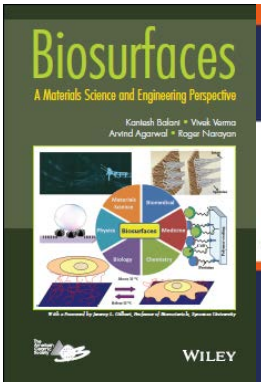
## SHORT BIOSKETCH

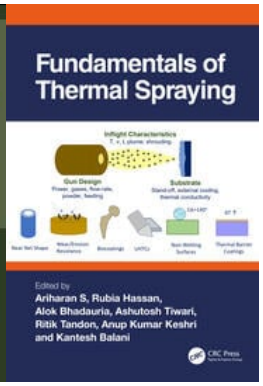
Dr. Kantesh Balani (**ORCID ID:** 0000-0003-0619-9164; **ResearcherID**: A-5325-2011; **Scopus Author ID**: 8218235100) is currently a full Professor (since Nov. 2018) in the Department of Materials Science and Engineering (MSE) at Indian Institute of Technology (IIT) Kanpur. He joined as an Assistant Professor in July 2008, and then was promoted to Associate Professor position (in Jun. 2014) in the Department of MSE. He earned his doctorate in Mechanical Engineering from Florida International University, Miami, FL, in 2007. His research concentrated on the role of carbon nanotube dispersion in enhancing the fracture toughness of $Al_2O_3$ nanocomposite. He has also worked on bio-ceramic hydroxyapatite coatings for bio-medical applications. He pursued his post-doctoral research in the Nanomechanics and Nanotribology Laboratory (NMNTL) and Plasma Forming Laboratory (PFL), Florida International University, Miami, FL.

He has published 200+ articles in the peer-reviewed international journals and has delivered 200+ lectures in the international/national conferences and workshops. His ***h-index of 46*** (*i-10 index of 155+, total citations: 10,000+*, Source: **Google Scholar**, https://scholar.google.co.in/citations?user=i8cuAm4AAAAJ&hl=en Apr. 2024, with 1000+ annual citations since last four years 2020-2023) strongly endorses his high research productivity. He is co-author of the books "***Fundamentals of Thermal Spraying"*** (CRC Press, 2022), "**Biosurfaces: *From the Perspective of Materials Scientist and Engineer"*** (*Wiley, 2015*), and "***Advanced Structural Ceramics"*** (*Wiley*, 2011). Also, he has adapted "***The Science and Engineering of Materials***" (*Cengage Learning*, 2012).




He is recipient of several fellowships and prestigious awards such as ***Class of 2021 Fellow*** by *ASM International* (***FASM***), ***Fellow*** *Indian National Academy of Engineering* (**FNAE**) ***2021***, ***Fellow*** *National Academy of Science India* (**FNASc**) **2021**, *2018 ASM-IIM Visiting Lecturer* award by ASM International, USA, prestigious *Swarnajayanti Fellowship 2016-17* by Department of Science and

Technology, Govt. of India, *Metallurgist of The Year* 2016 (*Metal Science*) by Ministry of Steels, Govt. of India, *Young Scientist Award 2014* by Centre for Education Growth and Research, *IEI Young Engineer Award* (2013-14) by The Institution of Engineers (India) in *Metallurgical and Materials Engineering discipline, 2013 P.K. Kelkar Research Fellowship*, 2012 TMS *Young Leader Professional Development Award* (received during TMS 2012 Annual Meeting in Mar. 11-15, 2012, Orlando, US) by Materials Processing & Manufacturing Division, *Materials Science and Engineering C Young Researcher Award 2011* by Elsevier, *Young Scientist Platinum Jubilee Award* 2010 by National Academy of Sciences, India (NASI), *Young Engineer Award 2010* by INAE, *Young Metallurgist Award 2010* from Ministry of Steels and Mines, Govt. of India, *Young Scientist Award* in Materials Science division by Indian Science Congress Association 2009, *R.L. Thakur Memorial Prize* 2009 (Indian Ceramic Society), *David Merchant International Student Achievement* Award 2007, *Arthur E. Focke LeaderShape* Award 2004, RCTF (*Research Challenge Trust Fund*) Fellowship 2002, *Sudharshan Bhat Memorial Prize* and *S. Ananthramakrishnan Memorial Prize 2001*, and *Deutscher Akademischer Austausch Dienst (DAAD) Scholarship 2001*.

Currently, he serves as the editor-in-chief of ***Nanomaterials and Energy*** *(Institution of Civil Engineers (Jun. 2017-till date),* Associate Editor of ***Journal of Thermal Spray and Technology*** (JTST, Springer, since Jan. 2022), a key reader for ***Metallurgical and Materials Transactions A*** *(Springer)* and serves as *Principal Editor* of the ***Journal of Materials Research*** (*MRS Publishing*), and is involved in the editorial board of *Defense Science Journal* (DRDO). Also, he is reviewer of over fifty technical journals from Elsevier, Blackwell Publishing Inc., Wiley, Springer, Hindawi, Highwire, MRS India/INSA, ACS Publications, Institution of Civil Engineers and American Society of Metals. His research interests include multi-functional biomaterials, nanomechanics and nanotribology of bio/nano composites, coatings, synthesis and processing of polymeric/ceramic nanocomposites, ultra-high temperature ceramics, and energy materials.

## EDUCATION

- 2007, ***Ph.D***., Mechanical and Materials Engineering, *Florida International University* (FIU), Miami, Florida (CGPA ***3.975/ 4.0***). ***Best Ph.D. Student, Deans Award, Dissertation Year Fellowship.***
- 2002, ***M.S.***, Materials Science and Engineering, *University of Kentucky*, Lexington, KY (CGPA ***3.57/ 4.0***). ***Research Challenge Trust Fund Fellowship.***
- 2001, ***M.Tech.***, Metallurgical and Materials Engineering, *Indian Institute of Technology (IIT) Madras*, Chennai, Tamilnadu, India (CGPA: ***9.86/ 10.0***). ***DAAD (Deutscher Akademischer Austausch Dienst) Scholarship*** and ***Sudharshan Bhat and S. Ananthramakrishnan Memorial Prize.***
- 1999, ***B. E.***, Metallurgical Engineering, *PSG College of Technology*, Coimbatore, Tamilnadu, India (***83.5 %***). ***Best Outgoing Student.***

## PROFESSIONAL EXPERIENCE

- Nov. 2018 – till date:
  ***Full Professor***, Indian Institute of Technology Kanpur, Kanpur, India
  ***Dean, Resources and Alumni (Mar. 2022 – till date)***
- *Jun. 2014* – Nov. 2018:
  ***Associate Professor***, *Indian Institute of Technology Kanpur*, Kanpur, India
- *Jul. 2008* – Jun. 2014:
  ***Assistant Professor***, *Indian Institute of Technology Kanpur*, Kanpur, India

- *July 2007- June 2008:*
  ***Post Doctoral Researcher***, Plasma Forming Laboratory (PFL) and Nanomechanical and Nanotribology Lab (NMNTL), *Florida International University* (FIU), Miami, USA.
- *August 2003-June 2007:*
  ***Graduate Research & Teaching Assistant***, FIU, Miami, FL, USA.
- *August 2001-August 2002:*
  ***Graduate Research Assistant***, *University of Kentucky*, Lexington, KY, USA.
- *May 2000-Feb 2001:*
  ***DAAD (Deutscher Akademischer Austausch Dienst) Exchange scholar***, *University of Stuttgart*, Germany.
- *Jul 1999-May 2000:*
  ***Half-Time Teaching Assistant***, *Indian Institute of Technology Madras*, Chennai, India.

**PATENTS GRANTED/FILED (8 granted + 9 filed):**

1. A. Bhaudauria, A. Tiwari, S, Baipai, A. Nisar, A.K. Keshri, Kantesh Balani, "***Bimodal Microstructure Toughens Plasma Sprayed $Al_2O_3$-YSZ-CNT Coatings***" (Application number: 202111039562),(Filing Date: 01/09/2021). **GRANTED** by The Patent Office (Patent Number: 529270), Govt. of India, on Mar. 20, 2024.
2. Abirami S, J.H. Prajapati, K. Dixit, M. S. Rana, R.M. Bhanderi, S. Mehta, S. Das, V. Kannojiya, H.P. Sharma, M. Sharma, P.C. Gond, K. Muralidhar, P. Joshi, N. Sinha, Kantesh Balani, J.G. Rao, A. Bandopadhyay, S.K. Mishra, "***VAD Demonstrator System with Mock Circulatory Loop for Testing, Demonstrating Functions and Performance of VAD***" (Filing Date: 03/01/2023). **GRANTED** by The Patent Office (Patent Number: 501166), Govt. of India, on Jan. 19, 2024.
3. I. Singh, N. Sinha, K. Dixut, Kantesh Balani, "***A 3D Printed Scaffold and a Process for Fabrication Thereof***", (Filing Date: 17/03/2023). **GRANTED** by The Patent Office (Patent Number: 496309), Govt. of India, on Jan. 09, 2024.
4. Md. Faisal, Anshul Gupta, Suboohi Shervani, Anandh Subramaniam, Kantesh Balani, Indian Patent filed (No. 119/DEL/2014), Jan. 15, 2014, titled "***Hydrogen Storage in Magnesium Based Hybrids Using Accumulative Roll Bonding***". (Publication Date: 06/05/2016). **GRANTED** by The Patent Office (Patent Number: 413242), Govt. of India, on Nov. 30, 2022.
5. C. Nayak, Ariharan S., S. Singh, Kantesh Balani, "***A Process For Sterilisation Of Ultra-High Molecular Weight Polyethylene And Its Nanocomposites***" (Application no. 202111003442) Complete patent filed with the Indian Patent Office on Dec. 08, 2021, Patent filed on January 25, 2021. **GRANTED** by The Patent Office (Patent Number: 410559), Govt. of India, on Oct. 31, 2022.
6. Surya P. Singh, S. Dubey, J. Ramkumar, Kantesh Balani, "***Synergistic effect of Carbon Nanotube and Graphene Nanoplatelets in Developing Porous and Thermal Damage Tolerant Polypropylene-SiC nanocomposites***" (Application Number: 202011056116), patent filed with Indian Patent Office on Dec. 23, 2020. **GRANTED** by The Patent Office (Patent Number: 373838), Govt. of India, on Aug. 04, 2021.
7. S. Karumanchi, S.V.S. Devarakonda, K.K. Sahoo, B. Deo, I. Shukla, D. Philip, Kantesh Balani, M. Malathi Indian patent (No. 949/CHE/2015), 27/02/2015, titled, "***Control Signal***

***Processing Device for Raising and Lowering of Lance and a Process Thereof***". **GRANTED** by The Patent Office, Govt. of India (Patent Number: 366467), on May 11, 2021.

8. Raja Choudhary, Vandana Singh, Neelima Mahato, Kantesh Balani, titled "***Suspension Agitator***" Indian patent filed (Application No. 923/DEL/2014, filed on Mar. 31, 2014). **GRANTED** by The Patent Office (Patent Number: 338895), Govt. of India, on Jun. 19, 2020.
9. Abdul Rahim Siddiqui, Kantesh Balani, Indian patent under filing, titled, "***Process For Preparation Of Super Hydrophobic Coating***" (Application Number: 201611020049, Filed on Jun. 11, 2016). **GRANTED** by The Patent Office (Patent Number: 337294), Govt. of India, on May 26, 2020.
10. V.C. Dave, S. Bajpai, Saranyamol VS, Md Ibrahim Sugarno, Kantesh Balani, "***Device For Mounting A Sample In Hypersonic Impact Testing Apparatus And Method Thereof***", Indian patent filed on Nov. 14, 2023, Application Number: 202311077319.
11. I. Singh, S. Gour, N. Dhandia, Kantesh Balani, "***A Bio-Ceramic for Bone Tissue Engineering and Method of Fabricating Thereof***", Indian patent filed on May 09, 2023, Application Number: 202311032623.
12. I. Singh, N. Sinha, K. Dixit, Kantesh Balani, "***A 3D-Printed Scaffold and a Process for Fabrication Thereof***", Indian patent filed on March 17, 2023, Application Number: 202311018148.
13. S. Bajpai, A. Bhadauria, Kantesh Balani, "***A Fixture for Shear Strength of Joined Ceramics-Based Composites***", patent filed on Mar. 13, 2023 (after provision patent on March 08, 2022), Application number: 202211015701.
14. S. Bajpai, A. Bhadauria, T. Venkateswaran, S.S. Singh, Kantesh Balani, "***Method of Joining Hafnium-And Zirconium-Diborides Based Ultra-High Temperature Ceramic Using Nickel Interlayer***". patent filed with the Indian Patent Office on Sept. 09, 2021, Application number: 202111041006.
15. A. R. Siddiqui, R. Maurya, Kantesh Balani, "***Process for Synthesis of Aligned Superhydrophobic (Antiwetting) Carbon Nanofiber Coating and its Applications***", Indian patent filed on May 18, 2020 (Published on Jun. 26, 2020), Application Number: 202011020924.
16. Aditi Pandey, Swati Midha, Sourabh Ghosh, Vinod Kumar Nigam, Kantesh Balani, "***HA-$CeO_2$-Ag composite for Bone Tissue Implant***" (Provisional patent filed. Nov. 2016, Application Number: 201611038479). Published by Indian patent office on May 11, 2018 in **Journal No. 19/2018**. **First Examination response (FER) submitted Aug. 2021.**
17. A. Dubey, Vimal C, J. Ramkumar, B.P. Singh, Kantesh Balani, S. Kant, "***System, Method and Device for Responsive Advancement of Mandible***", (Provisional patent filed on Mar. 14, 2018, Application number 201811009344).

## BOOKS/ BOOK CHAPTER:

1. Ariharan S., Rubia Hassan, Alok Bhadauria, Ashutosh Tiwari, Ritik Tandon, Anup K. Keshri, Kantesh Balani, "***Fundamentals of Thermal Spraying***", Nov. 2022, **CRC Press** (Taylor & Francis), ISBN 9781032344003 (**Book**).
2. C. Nayak, Kantesh Balani, "***Frontiers in Multi-functional Biomaterials for Hip-Joint Application***", *New Horizons in Metallurgy, Materials and Manufacturing*, 2022, **A. Arora, A. Shrivastava, C. Srivastava, N. Dhawan, S. S. Singh** (Eds), ***Springer*** (Book Chapter).

3. Kantesh Balani, Vivek Verma, Arvind Agarwal, Roger Narayan, Ed., "***Biosurfaces: From the Perspective of Materials Scientist and Engineer***", **John *Wiley and Sons Inc. & The American Ceramics Society,*** Jan. 2015, ISBN: 978111829997-5 (**Book**).
4. Bikramjit Basu and Kantesh Balani, ***"****Advanced Structural Ceramics****", John Wiley and Sons Inc. & The American Ceramics Society***, Aug. 2011, ISBN 9780470497111 (**Book**).
5. Kantesh Balani, "*The Science and Engineering of Materials*", by Donald R. Askeland, Pradeep P. Fulay, and Wendelin Wright ***Cengage Learning***, Jan. 2012, ISBN-13: 9788131516416. (**Book Adaptation**). **~ over 2200 copies sold.**
6. Ashutosh K. Dubey, Kantesh Balani and Bikramjit Basu, "*Electrically active biocomposites as smart scaffold for bone tissue engineering*" in book ***Nanomedicine: Technologies and Applications***. ***Woodhead Publishing Ltd***, October 2012, Pages 537-570 (Book Chapter).

## NATIONAL SERVICES:

1. Sectional Committee member of "***Orthopedics Instruments, Implants and Accessories***" (MHD02) of ***Bureau of Indian Standards*** (BIS), Feb. 2021 – till date. Have attended 5+ ISO (International Organization for Standardization) meetings and over 3 BIS meetings.
2. Member of ***Domain Expert Group*** for Fast Track Translational (FTT) and Fast Track Commercialization (FTC) research projects of Counsil of Scientific and Industrial Research (CSIR), Jan. 2024.
3. ***Monitoring Committee member*** of New Millennium Industry Technology Leadership Initiative (NMITLI), Counsil of Scientific and Industrial Research (CSIR), for the project, "Development of Dental Implants for Advanced and Critical Applications" since Sep. 2021.
4. Member, "***Defence Materials and Stores R&D Establishment Lab Research Council (LRC)***" constituted by Director General (Naval Systems & Materials), DRDO, since June 2023 -till date.
5. Project Review and Monitoring Committee (PMRC) member of project 'Multi-centric clinical trials of the indigenous total knee prosthesis 2.4 (TKP2.4) and its pilot production' funded by Office of the Principal Scientific Advisor to the Government of India (since May 2019).
6. Project Review and Monitoring Committee (PMRC) member of project on SiC Fiber Technology being developed by DMSRDE, Kanpur, Since May 2018.
7. Expert panel member of Material Standardization Sub-committee, Ministry of Defence, 2017-18.
8. Expert panel member of designing Arjun Armor Recovery and Repair Vehicle (ARRV), DRDO, GoI Aug. 2014-Feb. 2015.
9. Virtual Lab initiative of MHRD, GoI, (Coordinator at IIT Kanpur), 2014-17. Have developed two virtual Labs:
    a. Virtual Lab on "***Material Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli***" ***Over 200k+ views online*** (till Jan. 2024).
    Link: http://home.iitk.ac.in/~kbalani/vl-kb/home%20page.html
    b. Virtual Lab on "***Electron Microscopy for Beginners***": ***Over 55k+ views online*** (till Jan. 2024).
    Link: https://emb-iitk.vlabs.ac.in/
10. Have developed two courses (as co-instructor) on ***NPTEL*** (National Programme on Technology Enhanced Learning) portal:

a. ***Introduction to Biomaterials*** (with Prof. Bikramjit Basu, IISc, Bangalore): ***Over 60k+ views online*** (till Jan. 2024).
Link:https://www.youtube.com/watch?v=yZKdFVAJcrE&list=PLF051FCC12CB73ADC)

b. ***Nanostructures and Nanomaterials: Characterization and Properties*** (with Prof. Anandh Subramaniam, IIT Kanpur) ***Over 515k + views online*** (till Jan. 2024).
Link:https://www.youtube.com/watch?v=qUEbxTkPIWI&list=PLbMVogVj5nJSl_2XmFjuRmvuAgCOZXUjv

## THEME-WISE RESEARCH PUBLICATIONS (PEER-REVIEWED JOURNALS):

## Biomaterials:

1. I. Singh, K. Shakya, P. Gupta, P. Rani, I. Kong, V. Verma, Kantesh Balani, "The *Multifunctional 58S bioactive glass/silver/ceria Biocomposites with Effective Antibacterial, Cytocompatibility, and Mechanical Properties*", *accepted in* ***ACS Applied Materials & Interfaces***, Mar. 2024 DOI: https://doi.org/10.1021/acsami.3c17400.
2. I. Singh, K. Dixit, P. Gupta, S.M. George, N. Sinha, Kantesh Balani, "*3D-Printed Multifunctional Ag/$CeO_2$/ZnO Reinforced Hydroxyapatite-based Scaffolds for Bone Tissue Engineering*", ***ACS Applied Bio Materials***, Vol. 6 (12) (2023), pp. 5210-5223, https://doi.org/10.1021/acsabm.3c00457.
3. C. Nayak, P. Kushram, M.A.A. Zaidi, I. Singh, J. Sen, Kantesh Balani, "*Multi-Length Scale Strengthening of Ultra High Molecular Weight Polyethylene Bio-Composites with Functionalized Carbon Nanotube and Hydroxyapatite Reinforcement*", ***Journal of the Mechanical Behavior of Biomedical Materials***, Vol. 140 (2023) 105694 (16 pp), https://doi.org/10.1016/j.jmbbm.2023.105694.
4. H. T. Trinh, T.K.A. Tran, S. Arora, S.M. George, J. Sheri, J.H. Yang, P. Naruphontjirakul, Kantesh Balani, A. Karakoti, and A. Vinu, "*Zn-loaded SBA-1 and SBA-15 molecular sieves for combined antimicrobial and osteogenic activity*", **Advanced Materials Technologies**, 2023, 2201169 (15 pp) https://doi.org/10.1002/admt.202201169.
5. D. Mishra, R. Maurya, V. Verma, Kantesh Balani, K.V. M. Krishna, D. Srivastava, G. N. Ganesha, U. Singha, A. Mukhopadhyay, "*Understanding the Influence of Graphene-Based Lubricant/Coating During Fretting Wear of Zircaloy*", ***Wear***, Vol. 512-513 (2023), 204527 (8 pp).
6. C. Nayak, P. Singh, Kantesh Balani, "*Contact Stress and Tribological Damage Tolerance of Hydroxyapatite and Carbon Nanotube Reinforced Polyethylene Cup Liner Against Zirconia Femoral Head*", ***Journal of the Mechanical Behavior of Biomedical Materials***, Vol. 136 (2022), 105435 (13 pp).
7. S.M. George, C. Nayak, I. Singh, Kantesh Balani, "*Multifunctional Hydroxyapatite Composites for Orthopedic Applications: A Review*", ***ACS Biomaterials Science and Engineering***, Vol. 8 (8) (2022), pp.3162–3186, DOI: 10.1021/acsbiomaterials.2c00140.
8. C. Nayak, Kantesh Balani, "*Effects of reinforcements and gamma-irradiation on ultra-high molecular weight polyethylene for hip arthroplasty: A review*", ***Journal of Applied Polymer Science***, e51275 (2021) (29 pp).
9. I. Singh, S.M. George, A. Tiwari, J. Ramkumar, Kantesh Balani, "*Influence of Laser Surface Texturing on the Wettability and Antibacterial properties of Metallic, Ceramic, and Polymeric Surfaces*", ***Journal of Materials Research***, Vol. 36 (2021), pp. 3985–3999.

10. C. Nayak, Ariharan S, B. Kundu, V.K. Balla, Kantesh Balani, "*Radiation-Induced Effects on Micro-Scratch of Ultra High Molecular Weight Polyethylene Based Nanocomposites*", ***Journal of Materials Research and Technology***, Vol. 11 (2021) pp. 2277-2293.
11. A. Ganvir, S. Nagar, N. Markocsan, Kantesh Balani, "*Deposition of hydroxyapatite coatings by axial plasma spraying: influence of feedstock characteristics on coating microstructure, phase and mechanical properties*", ***Journal of the European Ceramic Society***, Vol. 41 (8) (2021), pp. 4637-4649.
12. C. Nayak, R. Kundu, Kantesh Balani, "*Tribological properties of SS 304 and Ti6Al4V using four reciprocating geometries under dry and lubricated conditions*", in ***Nanomaterials and Energy***, Vol. 10 (1) (2021) pp 1-12.
13. A. Raj, N. Dhandia, Kantesh Balani, "*Adhesin Protein Interaction of Staphylococcus Aureus Bacteria with Various Biomaterial Surfaces*", ***ACS Biomaterials Science & Engineering***, Vol. 6 (2020)**,** Issue 11, 6161–6172. *DOI: 10.1021/acsbiomaterials.0c01285.*
14. Kantesh Balani, "*An Opinion on Hydroxyapatite Based Bio-composites as Bone Scaffolds*", ***Journal of Metallurgy and Materials Science,*** Vol. 62 (2020), No. 3-4, pp. 17-26.
15. M. Mistri, S. Joshi, K.K. Kar, Kantesh Balani, "*Tribomechanical insight into carbide-laden hybrid suspension-powder plasma-sprayed Tribaloy T400 composite coatings*", ***Surface & Coatings Technology***, Vol. 396 (2020), p. 125957 (15 pp).
16. S. Ariharan, R. Maurya, RK. Sharma, V.K. Sharma, S. Lohia, Kantesh Balani, "*Damage Mechanics of Polypropylene Based Composites During Progressive- and Constant-load-Scratching*", ***Polymer Composites***, Vol. 41 (2020) pp. 3830-3841.
17. A. Bhattacharjee, R. Hassan, A. Gupta, M. Verma, M,.P. Anand, P. Sengupta, M. Saravanan, I. Manna, Kantesh Balani, "*Effect of Zn and Co Doping on Antibacterial Efficacy and Cytocompatibility of Spark Plasma Sintered Hydroxyapatite*" ***Journal of American Ceramic Society***, Vol. 103 (2020), pp. 4090–4100.
18. F. Alam, A. Kumar, V.R. Shukla, A. Nisar, and Kantesh Balani, "*Multi-length Scale Wear Damage Mechanisms of Ultra-high Molecular Weight Polyethylene Nanocomposites*", ***Polymer Testing***, Vol. 81 (2020), pp. 106210 (11pp).
19. A. Bhattacharjee, A. Gupta, P.A. Murugan, P. Sengupta, M. Verma, S. Matheshwaran, I. Manna, and Kantesh Balani, "*Antibacterial and Magnetic Response of Site-Specific Cobalt Incorporated Hydroxyapatite*" ***Ceramics International***, Vol. 46 (1) (2020) pp. 513-522.
20. A. Bhattacharjee, A. Gupta, P.A. Murugan, P. Sengupta, M. Verma, S. Matheshwaran, I. Manna, Kantesh Balani, "*Site-Specific Antibacterial Efficacy and Cyto/Hemocompatibility of Zinc Substituted Hydroxyapatite*", ***Ceramics International***, Vol. 45 (9) (2019), pp. 12225-12233.
21. A. Bhattacharjee, Y. Fang, T. Hooper, N. Kelly, D. Gupta, Kantesh Balani, I. Manna, T. Baikie, P. Bishop, T. White, J. Hanna, "*Crystal Chemistry and Antibacterial Properties of Cuperiferous Hydroxyapatite*", ***Materials***, Vol. 12 (11) (2019), pp. 1814 (17pp).
22. A. Singh, D.S. Patel, Kantesh Balani, J, Ramkumar, "*Single step laser surface texturing for enhancing contact angle and tribological properties*", ***The International Journal of Advanced Manufacturing Technology***, Vol. 100 (5-8) (2019) pp 1253-1267.
23. C. Nayak, S. Ariharan, P. Kushram, Kantesh Balani, "*Fretting of Aluminum Oxide, Hydroxyapatite and Carbon Nanotubes Reinforced Ultra High Molecular Weight Polyethylene*", ***Journal of Mineral, Metal and Material Engineering***, Vol. 4 (2018), pp 22-34.

24. S. Kanhed, S. Awasthi, S. Midha, J. Nair, A. Nisar, A.K. Patel, A. Pandey, R. Sharma, S. Goel, A. Upadhyaya, S. Ghosh, Kantesh Balani, "*Microporous Hydroxyapatite Ceramic Composites as Tissue Engineering Scaffolds: An Experimental and Computational Study*", ***Advanced Engineering Materials***, Vol. 20 (2018), 1701062 pp. 11.
25. A. Pandey, A.K. Patel, S. Ariharan, V. Kumar, R.K. Sharma, S. Kanhed, V.K. Nigam, A. Keshri, A. Agarwal, Kantesh Balani, "*Enhanced Tribological and Bacterial Resistance of Carbon Nanotube, Ceria and Silver Incorporated Hydroxyapatite Biocoating*", ***Nanomaterials*** Vol. 8(6) (2018), 363 pp20.
26. A. Pandey, V.K. Nigam, Kantesh Balani, "*Multi-length Scale Tribology of Hydroxyapatite Reinforced with Ceria and Silver*". ***Wear***, Vol. 404-405 (2018), pp 12-21.
27. A. Pandey, S. Midha; R.K. Sharma; R. Maurya; V. K. Nigam; S. Ghosh, Kantesh Balani, "*Antioxidant and Antibacterial Hydroxyapatite-based Biocomposite for Orthopedic Applications*", ***Materials Science and Engineering C***, Vol. 88 (2018), pp. 13-24.
28. P. Nautiyal, F. Alam, Kantesh Balani, A. Agarwal, "*The Role of Nanomechanics in Healthcare*". ***Advanced Healthcare Materials***, Vol. 7 (3), (2018) 1700793 pp (28), DOI: 10.1002/adhm.201700793.
29. R. Maurya, A.R. Siddiqui, Kantesh Balani, "*In vitro Degradation and Biomineralization Ability of Hydroxyapatite Coated Mg-9Li-7Al-1Sn and Mg-9Li-5Al-3Sn-1Zn Alloys*". ***Surface & Coatings Technology***, Vol. 325, (2017), pp. 65-74.
30. S. Kanhed, S. Awasthi, S. Goel, A. Pandey, R. Sharma, A. Upadhyaya, Kantesh Balani, "*Porosity Distribution Affecting Mechanical and Biological Behaviour of Hydroxyapatite Bioceramic Composites*", ***Ceramics International***, Vol. 43 (Issue 13), (2017), pp. 10442-10449.
31. R. K. Sharma, A. Nisar, Kantesh Balani, "*Mechanics of ZnO Morphological Dependence on Wear Resistance of Ultra High Molecular Weigh Polyethylene*". ***European Journal of Mechanics- A/Solids***, Vol. 65, (2017), pp. 149-158.
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## Others:

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**RESEARCH ARTICLES (***accepted*/revision submitted/being revised/prepared)

1. P. Rani, I. Singh, Kantesh Balani, "*Carbon nanotube functionalization supports mechanical, tribological, and biological response of freeze-dried ultra-high molecular weight polyethylene-based bio-composites*", *submitted to* ***Journal of Applied Polymer Science***, Apr. 2024.
2. D. Rana, J. Ramkumar, Kantesh Balani, "*Laser treatment of (Zr-Ta-W-Ti)C- SiC based high entropy carbide ceramics reinforced with carbon nanotubes, graphite and graphene nanoplatelets*", *submitted to* ***Materials Today Communications***, Mar. 2024.
3. S. Bajpai, S. Dubey, T. Venkateswaran, S. S. Singh, Kantesh Balani, "*An Insight to Wetting and Joining of $HfB_2$ and $ZrB_2$ based Ultra High Temperature Ceramics: A Review*", *submitted to* ***Materials Science and Engineering: R: Reports***, Mar. 2024.
4. S. Gour, A. Mukherjee, Kantesh Balani, N. Dhami, "Atomic force microscopy investigations of transient early-stage bacterial adhesion and antibacterial activity of silver and ceria modified bioactive glass", *submitted to* ***Journal of Advanced Materials***, Feb. 2024.
5. S. Gour, A. Mukherjee, Kantesh Balani, N. Dhami, "*Quantitative study of early-stage transient bacterial adhesion to bioactive glass and glass ceramics: Atomic Force Microscopic observations*", *submitted to* ***Scientific Reports***, Feb. 2024.
6. Md Aman, P. Konduparty, S. Sharma, V. Sharma, Kantesh Balani, S.K. Jha, S. Omar, "*A Review on Layered Double Hydroxide based Nanocomposites for Batteries and Supercapacitors*", *submitted to* ***Journal of The Electrochemical Society***, Mar. 2023.
7. Rajkumar, A. Verma, J. Ramkumar, Kantesh Balani, "*Design and Parametrization of TPMS Lattice using Computational and Experimental Approach*", *submitted to* ***Journal of Manufacturing Processes***, Feb. 2024.
8. K. Rathore, I. Singh, Kantesh Balani, S. Sharma, V. Verma, "*Fabrication and Characterization of Multi-Layered Coaxial Agar-based Electrospun Biocomposite Mat, Novel Replacement for Transdermal Patches*", *submitted to* ***Biomaterials Science***, Oct. 2023.
9. Rajkumar, A. Verma, A.K. Yadav, J. Ramkumar, Kantesh Balani, "*Design and Parametrization of TPMS Lattice for Large Segmental Bone Scaffolds Using Computational Methods*", *submitted to* ***International Journal on Interactive Design and Manufacturing***, May 2023.
10. A. Agarwal, T. Tikku, R. Khanna, K. Srivastava, Kantesh Balani, R.P. Maurya, S.L. Verma, "*Quantitative Analysis of Enamel Surface Roughness After Using a Colour Changing Adhesive For Bonding: In Vitro Study*", *submitted to* ***Saudi Dental Journal***, May 2023.
11. S. Dubey, S.P. Singh., J. Ramkumar, Kantesh Balani, "*SiC, Carbon Nanotube and Graphene Nanoplatelets as Potential Additives for Flame Retardant Polypropylene*", to be *submitted*.
12. A. R. Siddiqui, R. Maurya, B. Wangaskar, Kantesh Balani, "*Superhydrophobic Multifunctional Carbon Nanofiber Structure Towards Excellent Solar Water Evaporation and Recyclable Sorption of Oil and Organic Solvents*", to be *submitted*.
13. P. Tripathi, S. Awasthi, J. Ramkumar, Kantesh Balani, "*Materials and Coatings for Mitigating Erosive Wear and Surface Degradation: A Review*", to be *submitted*.

## INTERNATIONAL/NATIONAL TECHNICAL TALKS

1. Kantesh Balani, "***Advanced Materials for Fascinating Applications***", Kantesh Balani, "Advanced Materials for Fascinating Applications", Apr. 05, 2024, Jaipur, Rajasthan, India (**Invited**).
2. Kantesh Balani, "***Advanced Materials and Computational Techniques***" Recent Advances in Materials Science and Computational Techniques (RAMSACT) 2024, Apr. 05, 2024, Manipal University Jaipur, Jaipur, Rajasthan, India (**Keynote**).
3. Kantesh Balani, "***Advanced Materials for Fascinating Applications***", Mar. 06, 2024, Institute for Plasma Research, Gandhinagar, Gujarat, India (**Invited**).
4. Kantesh Balani, "***Fascinating Materials for Engineering Applications***", *Amalgam 2024*, Mar. 03, 2024, Indian Institute of Technology Madras, Chennai, Tamilnadu India (**Plenary**).
5. Fahad Alam, Arindam Raj, Neeraj Dhandia, Chinmayee Nayak, Kantesh Balani, "***Data Driven Assessment of Protein Interaction with Biomaterials***", *Computing, Communication, Control, Informatics and Bio-Science*, Feb. 03, 2024, Kanpur Institute of Technology, Kanpur, U.P., India (**Keynote**).
6. Fahad Alam, Arindam Raj, Neeraj Dhandia, Chinmayee Nayak, Shivani Gour, Indrajeet Singh, Kantesh Balani, "***Biomaterial Interaction with Bacterial Protein for Real Life Implants***", *2nd International Conference on Futuristic Advancements in Materials, Manufacturing and Thermal Sciences* (ICFAMMT 2024), Jan. 19-21, 2024 (online), Institute of Infrastructure Technology Research and Management (IITRAM) Ahmedabad, Gujarat, India (**Keynote**).
7. Kantesh Balani, "***Advanced Biomaterials for Hip Joint Applications***", *Exploring the Emerging World of Ceramics and Glass* (ICEECG 2023), Dec. 20, 2023, CSIR-Central Glass & Ceramic Research Institute, Jadavpur, Kolkata, India (**Keynote**).
8. I. Singh, K. Shakya, P. Gupta, P. Rani, I. Kong, V. Verma, Kantesh Balani, "***Multifunctional 58S Bioglass-Ag-$CeO_2$ Biocomposites with Effective Antibacterial, Cytocompatible and Mechanical Properties***", *First IITK-LTU Academy Workshop*, Nov. 27-28, 2023, La Trobe University Melbourne, Australia, (**Invited**).
9. Kantesh Balani, "***Characterization of Nanomaterials Used in Agriculture***", African-Asian Rural Development Organization, Nov. 15, 2023, IIT Kanpur, India (**Invited**).
10. Kantesh Balani, "***Engineering Various Applications of Advanced Nanomaterials***", *Institute Research Symposium*, Nov. 05, 2023, IIT Kanpur, India.
11. Kantesh Balani, A. Bhadauria, Shiven P., S. Kushwaha, A. Tiwari, A.K. Keshri, "***Alumina-Zirconia based Thermal Barrier Coatings: Conventional to Bimodal Microstructure***", *Asian Thermal Spray Conference & Expo 2023* (ATSC 2023), IIT Madras, Chennai, India, Nov. 2-4, 2023 (**Invited**).
12. F. Alam, A. Raj, N. Dhandia, C. Nayak, Kantesh Balani, "***Sensing Protein Interactions on Various Biosurfaces***", *International Conference on Metallurgical Engineering and Centenary Celebration (METCENT)*, IIT Banaras Hindu University, Varanasi, India, October 26, 2023 (**Invited**).
13. Kantesh Balani, "***Fascinating World of Materials***", State (KVS) Level Science, Mathematics and Environment Exhibition for Children 2022-23, IIT Kanpur, Kanpur, India, Jul. 11, 2023 (**Plenary**).
14. Kantesh Balani, "***Introduction to Virtual Labs***", Rajkiya Engineering College Bijnor, Bijnor, India, June 24, 2023 (**Invited**).

15. F. Alam, A. Raj, N. Dhandia, C. Nayak, Kantesh Balani, "***Bacterial Protein Interactions with Biosurfaces***", Department of Chemistry, IIT Jodhpur, June 22, 2023 (**Invited**).
16. Kantesh Balani, "***Fascinating World of Materials***", Materials Camp, IIT Kanpur, Kanpur, India, May 06, 2023.
17. Kantesh Balani, "***Scanning Electron Microscopy***", Materials Camp, IIT Kanpur, Kanpur, India, May 07, 2023.
18. Kantesh Balani, "***Story of Bacteria Interaction with Biosurfaces***", Teerthanker Mahaveer University, Moradabad (India), Apr. 19, 2023 (**Invited**).
19. S. Bajpai, A. Bhadauria, Kantesh Balani, "***Joining of $HfB_2$-$ZrB_2$ based composites with and without Ni filler layer***", 47th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2023), Hilton Daytona Beach Resort and Ocean Center in Daytona Beach, Florida, USA, Jan. 22 - 27, 2023.
20. Kantesh Balani "***Introduction to Virtual Labs***", Online workshop on Virtaul Labs, Rajkiya Engineering College Banda, Banda, India, Dec. 17, 2022 (**Invited**).
21. Kantesh Balani, "***Paradigm of Functional Materials for Biological Applications***", IITK - Swansea University workshop on *Cardiovascular & Pulmonary Flows*, IIT Kanpur, Dec. 12, 2022.
22. Kantesh Balani, "***Role Of Alumni In Strengthening MNNIT Academics And Research***", MNNIT Allahabad, November 25, 2022 (Virtual Mode).
23. R. Hassan, Kantesh Balani, "***$ZrB_2$-SiC composites: Effect of SiC particle size on multi-length scale wear and oxidation resistance of $ZrB_2$***", *International Materials, Applications & Technologies* (IMAT) 2022, New Orleans, Louisiana, USA, September 13, 2022 (Virtual mode).
24. F. Alam, A. Raj, N. Dhandia, C. Nayak, Kantesh Balani, "***Deadhesion Mechanics of S. aureus Bacteria on Hip-joint Biosurfaces***", *International Materials, Applications & Technologies* (IMAT) 2022, New Orleans, Louisiana, USA, September 14, 2022 (Virtual mode).
25. Kantesh Balani, "***Ultra High Temperature Ceramics for Reentry Space Vehicles***", Webinar, Pondicherry University, June 24, 2022 (**Invited**).
26. Kantesh Balani, "***Adhesion Mechanics of Bacteria on Polymeric & Other Biosurfaces***", *13th International Conference on Advancements in Polymeric Materials, APM 2022 (virtual mode),* CIPET, Chennai, Mar. 08, 2022 (**Keynote**).
27. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Virtual Lab Workshop*, Rameshwaram Institute of Technology and Management (Virtual), Lucknow Feb. 26, 2022, (**Invited**).
28. Kantesh Balani, "***Hydroxyapatite Based Coatings for Biological Applications***", *Recent Advances in Manufacturing Processes For Industrial Applications* (Virtual Mode), NITK Surathkal, India, Feb. 21, 2022 (**Invited**).
29. Kantesh Balani, "***How to Write a Good Thesis***", *PG Academics and Career Council*, Feb. 03, 2022, IIT Kanpur. (**Invited**)
30. Kantesh Balani, "***Processing of Nanostructured Materials For Superhydrophobicity***", *Faculty Development Program on Methods of Material Synthesis (online),* Bhavan's Vivekananda College, Secundarabad, Jan. 20, 2022 (**Invited**).

31. Kantesh Balani, "***Engineering Wetting and Superhydrophobicity***", AICTE-ISTE Faculty Development Program (online) on *Advances in Materials Processing and Characterization*, DAVIET Jalandhar, Jan. 06, 2022 (**Invited**).
32. Kantesh Balani, "***Exploring Protein Adhesion and Tribology of Biosurfaces***", *AICTE-ISTE Refresher Program* (online), IPS College of Technology & Management, Gwalior, Jan. 05, 2022 (**Invited**).
33. Kantesh Balani, "***Advanced Nanomaterials: Characterization & Engineering Their Applications***", AICTE ATAL Faculty Development Program (online) on *Current Trend in Engineering Nano-Materials, Characterizations & Their Applications,* Indira Gandhi National Tribal University, Amarkantak, Dec. 08, 2021 (**Invited**).
34. Kantesh Balani, "***Microstructural Engineering of Thermal Barrier Coatings***", AICTE ATAL Faculty Development Program (online) on *Research Aspects on Thermal Barrier Coatings*, Mepco Schlenk Engineering College, Dec. 06, 2021 (**Invited**).
35. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", Use of *Virtual Labs*, Rajkiya Engineering College Banda, Dec. 03, 2021 (**Invited**).
36. Kantesh Balani, "***Microstructural Engineering of Thermal Barrier Coatings***", AICTE ATAL FDP on *Research Advances on Thermal Barrier Coatings*, Mepco Schlenk Engineering College, Sivakasi, (online) Dec. 05, 2021 (**Invited**).
37. Kantesh Balani, "***Adhesion Mechanics of Bacteria on Biosurfaces***", *International Conference on Advanced Materials and Mechanical Characterization*, SRM Institute of Science and Technology, Kancheepuram, Tamilnadu 603203, India (Virtual), Dec. 03, 2021 (**Invited**).
38. Kantesh Balani, "***Find a Leader in You***", Material Advantage @ IIT Kanpur (Online), Oct. 15, 2021 (**Invited**).
39. Kantesh Balani, "***Virtual Labs – Reskill and Upskill***", Anand Engineering College, Lucknow, India (Online)–Sep. 17, 2021 (**Invited**).
40. Kantesh Balani, "***Workshop on Virtual Laboratories***", *Research and Innovation Cell*, Vision Group of Institutions, Kanpur and Aligarh, India (Online)–Sep. 11, 2021 (**Invited**).
41. Kantesh Balani, "***Coatings for Surface Modification***", *Visionary Leaders for Manufacturing*, Sept. 10, 2021, IIT Kanpur. (**Invited**)
42. Kantesh Balani, "***Multifunctional Biomaterials for Hip-Joint Arthroplasty***", *Visionary Leaders for Manufacturing*, Sept. 09, 2021, IIT Kanpur. (**Invited**)
43. Kantesh Balani, "***Multifunctional Architecture and Exploring Protein Deadhesion on Biosurfaces***", online Sunday-evening talk on *Translational Research in Materials Science*, Aug. 22, 2021 (**Invited**).
44. Kantesh Balani, "***Designing Multifunctional Biomaterials and Exploring Protein Deadhesion***", online talk on Saturday evening lecture series, ASM India Chapter, July 31, 2021 (**Invited**).
45. Kantesh Balani, "***The Importance of Virtual Laboratory and Quality of Education"***, *Faculty Webinar*, Galgotias College of Engineering and Technology, Noida, U.P., India, Jul. 31, 2021 (**Invited**).
46. Kantesh Balani, "***Introduction to Virtual Laboratories***", *Faculty Development Program on Emerging Trends in Electrical and Electronics Engineering*, Hindustan College of Science and Technology, Mathura, India, Jul. 26, 2021 (**Keynote**).

47. Kantesh Balani, "***Hydroxyapatite Based Multibiomaterials for Orthopedic Applications***", Faculty Development Program online event on Multimaterials, IIT Kanpur, U.P., India, Jul. 19, 2021 (**Invited**).
48. Kantesh Balani, "***Fascinating World of Materials***", *Faculty Development Program* online event on ***Novel Materials***, Rajakiya Engineering College, Banda, Jul. 06, 2021 (**Keynote**).
49. Kantesh Balani, "***Decoding Adhesion Mechanics of Bacterial Proteins on Biosurfaces***", online event on *Nanomechanics for Biomaterials and Soft Matter*, IIT Palakkad, Bruker & Industron, Jun. 30, 2021 (**Keynote**).
50. Kantesh Balani, "***Recent Advances in Biomedical Bone Implants***", QIP Short Term Course on *Theoretical and Practical Perspective on Material Manufacturing Technology 2021*, IIT Kanpur, U.P., India Mar. 12, 2021 (**Invited**).
51. Kantesh Balani, "***Bioceramics: Bioactive Hydroxyapatite Based Composites for Orthopedic Applications***", QIP Short Term Course on *Advanced Ceramics and Composites for Multifunctional Applications*, IIT Kanpur, Mar. 05, 2021 (**Invited**).
52. Kantesh Balani, "***Practical Scanning Electron Microscopy***", invited lecture in short-term course on *Advanced Materials Characterizations: From Fundamentals Toward Applications*, IIT BHU, India, Feb. 23, 2021 (**Invited**).
53. Kantesh Balani, "***Indentation of Materials***", *Expert Lectures on Materials Science*, Shambhunath Institute of Engineering & Technology (SIET) Prayagraj, India, Dec. 28, 2020 (**Invited**).
54. Kantesh Balani, "***Practical Scanning Electron Microscopy***", *Conference on Processing and Characterization of Materials (CPCM 2020)*, NIT Rourkela, India, Dec. 19, 2020 (**Plenary**).
55. Ariharan S, P. Mohapatra, A. Bhadauria, A. Tiwari, S.T. Aruna, A. Keshri, Kantesh Balani, "***Plasma Spraying of Yttria Stabilized Zirconia Based Thermal Barrier Coating***", The Indian Structural Integrity Society (InSIS), IIT Bombay, Mumbai, India Dec. 18, 2020 (**Invited**).
56. Kantesh Balani, "***Fascinating Paradigm of Advanced Materials"***, *International Conference on Advance Materials*, Dec. 18, 2020, Gondwana University Gadchiroli, Maharashtra state, India (**Invited**).
57. C. Nayak, I. Singh, Kantesh Balani, "***Overview of Frontiers in Biomaterials***" National Workshop on the theme of *New Horizons in Metallurgy, Materials and Manufacturing*, Indian Institute of Metals (online), Dec. 16, 2020 (**Invited**).
58. Kantesh Balani, "***Assessing Adhesion Strength of Bacterial Protein on Biosurfaces***" TEQIP (phase III) sponsored 5-days National *e-Workshop* on *Surface Characterization: Tools and Applications (SCTA 2020)*, NITK Surathkal, India, Dec. 15, 2020 (**Invited**).
59. Kantesh Balani, "***Be a Tomorrow's Leader***", Induction Programme at Allenhouse, Allenhouse Colleges (Online event), Nov. 27, 2020 (**Expert Lecture**).
60. Kantesh Balani, "***Synthesis and characterization of nanomaterials***", *Synthesis and characterization of nanomaterials SCNM-2020*, Department of Physics, J C Bose University of Science and Technology, YMCA, Faridabad, India, Nov. 04, 2020 (**Invited**).
61. Kantesh Balani, "***Smart Materials as Research Frontiers***", *Online Short Term Training Program (STTP)*, Department of Mechanical Engineering at C. V. Raman Global University Bhubaneswar, Odisha, India, Nov. 02, 2020 (**Invited**).

62. Kantesh Balani, "***Ultra High Temperature Ceramics for Aerospace Applications***", *Faculty Development Program*, IIT Jammu, India, Oct. 26, 2020 (**Invited**).
63. Kantesh Balani, "***Virtual Laboratory***", *Workshop on Virtual Labs*, Axis Colleges, Kanpur, India, Oct. 23, 2020 (**Invited**).
64. Kantesh Balani, "***Introduction to Virtual Labs***", *Faculty Development Program on Virtual Labs*, Madan Mohan Malaviya University of Technology, Gorakhpur, India, Oct. 12, 2020 (**Invited**).
65. Kantesh Balani, "***Adhesion Strength of Bacteria on Biosurfaces***", *Opportunities in Bioceramic Materials in Orthopedic, Dental and Tissue Engineering Applications (OBMODTEA) 2020*, National Institute of Technology Rourkela, Sep. 27, 2020 (**Invited**).
66. Kantesh Balani, "***Virtual Lab on Material response to Microstructural-, Mechanical-, Thermal- and Biological-Stimuli***", Faculty Development Program, Madan Mohan Malaviya University of Technology, Gorakhpur, India, Sept. 24, 2020 (**Invited**).
67. Kantesh Balani, "***Fascinating World of Materials***", *Faculty Development Program* on Novel Materials, Rajakiya Engineering College, Banda, Sep. 18, 2020 (**Keynote**).
68. Kantesh Balani, "***Adhesion Strength of Bacteria on Biosurfaces***", *Faculty Development Program*, Raghu Engineering College, Vishakhapatnam, Aug. 18, 2020 (**Invited**).
69. Kantesh Balani, "***Introduction to Virtual Laboratories***", *e-BOOTATHON-2*, Bundelkhand Institute of Engineering and Technology, Jhansi, India, Aug. 18, 2020 (**Keynote**).
70. Kantesh Balani, "***Introduction to Virtual Laboratories***", *Online webinar*, Rustamji Institute of Technology, Gwalior, India, Aug. 08, 2020 (**Invited**).
71. Kantesh Balani, "***Introduction to Virtual Laboratories***", *e-BOOTATHON-1*, Rajkiya Engineering College Banda, India, Aug. 04, 2020 (**Keynote**).
72. Kantesh Balani, "***Learning Through Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Practical Learning Through Virtual Lab*, Institute of Engineering & Technology Dr. Rammanohar Lohia Avadh, Ayodhya, India, Jul. 20, 2020 (**Invited**).
73. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Workshop on Virtual Labs*, Veer Kunwar Singh University Ara, Bihar, Jul. 20, 2020 (**Invited**).
74. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Live Webinar on Virtual Labs*, Meerut Institute of Engineering and Technology (MIET), Meerut, India, Jun. 27, 2020 (**Invited**).
75. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Virtual Labs*, Feroze Gandhi Institute of Engineering and Technology, Raebareli, India, Jun. 26, 2020 (**Invited**).
76. Kantesh Balani, "***Virtual Classroom Virtual Learning***", *Webinar on Virtual Labs, Webinar on Virtual Classes Virtual Learning*, BITT Polytechnic Ranchi, India, Jun. 25, 2020 (**Keynote**).
77. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Webinar on Virtual Labs*, BITT Polytechnic Ranchi, India, Jun. 18, 2020 (**Invited**).
78. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Webinar on Virtual Labs*, M.J.P. Rohilkhand University Bareilly, India, Jun. 06, 2020 (**Keynote**).

79. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Webinar on Virtual Labs*, Kali Charan Nigam Institute of Technology, Banda, Jun. 05, 2020 (**Invited**).
80. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Webinar on Virtual Labs*, Madan Mohan Malaviya University of Technology, Gorakhpur, India, May 29, 2020 (**Invited**).
81. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Webinar on Virtual Labs*, IIMT College of Engineering, Greater Noida, India, May 29, 2020 (**Invited**).
82. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Virtual Lab Practices*, Buddha Institute of Technology Gida, Gorakhpur, India, May 27, 2020 (**Keynote**).
83. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Webinar on Virtual Labs*, R.K. Goel Institute of Technology, Ghaziabad, India, May 20, 2020 (**Invited**).
84. Kantesh Balani, "***Introduction to Virtual Laboratories***", *Online webinar*, Kamla Nehru Institute of Technology (KNIT) Sultanpur, India, Apr. 30, 2020 (**Invited**).
85. Kantesh Balani, "***Introduction to Virtual Laboratories***", *Webinar on Virtual Labs*, D. A.P.J. Abdul Kalam Technical University, Lucknow, India, Apr. 22, 2020 (**Invited**).
86. Kantesh Balani, "***Introduction to Virtual Laboratories***", Apr. 18, 2020, *Webinar on Virtual Lab*, B.I.E.T. Jhansi, India (**Invited**).
87. Kantesh Balani, "***Introduction to Virtual Laboratories***", *Virtual Labs: A Reality for Degree Level Institutions under TEQUIP-III*, Dr. Ram Manohar Lohia Avadh University, Ayodhya, India, Apr. 16, 2020 (**Invited**).
88. Chinmayee Nayak, Ariharan S, V.K. Bhalla, Kantesh Balani, "***Micro-scratch of Irradiated Compression-Molded Ultra High Molecular Weight Polyethylene (UHMWPE) based Nanocomposites***", *TMS 149th Annual Meeting and Exhibition*, San Diego, California, USA, Feb. 23-27, 2020.
89. Shipra Pathak, Kantesh Balani, "***Effect of $B_4C$ Addition on $(Hf,Zr)B_2$ Based Ultra High Temperature Ceramics***", *TMS 149th Annual Meeting and Exhibition*, San Diego, California, USA, Feb. 23-27, 2020.
90. Kantesh Balani, "***Advanced Nanomaterials: From Laboratory to Applications***", *International Conference on Advanced Nanomaterials*" (ICAN'2020, Rama University, Kanpur, Uttar Pradesh, India, Feb. 27-29, 2020. (**Keynote talk**)
91. Kantesh Balani, "***Adhesion Strength of Bacteria on Various Biological Surfaces***", *Biomaterial-Based Therapeutic Engineering and Regenerative Medicine* (BIO-TERM) 2019, IIT Kanpur, Nov. 29- Dec. 01, 2019. (**Keynote talk**)
92. Kantesh Balani, "***Fundamentals of Ceramics Processing***", *Electroceramics for Energy Applications*, IIT Kanpur, Nov. 06, 2019, IIT Kanpur.
93. Kantesh Balani, "***Bioactive Hydroxyapatite Based Composites for Orthopedic Applications***", *Faculty Development Program on 3D* Printing & Design With Interdisciplinary Applications*, MANIT Bhopal, Nov. 04, 2019 (**Invited**).
94. Kantesh Balani, "***Adhesion Strength of Bacteria on Various Biological Surfaces***", *Faculty Development Program on 3D* Printing & Design With Interdisciplinary Applications*, MANIT Bhopal, Nov. 04, 2019 (**Invited**).
95. Kantesh Balani, "***Basics of Nanoindentation***", Nanomechanics and Biotribology 2019, IIT Kanpur, Sep. 14-15, 2019.

96. Kantesh Balani, "***The Fascinating World of Materials***", NIT Srinagar, May 27, 2019 (**Invited**).
97. Kantesh Balani, "***Carbon Nanocomposites for Potential Structural Applications as UHTCs***", QIP short-term course on *Carbon Nanomaterials - Recent Advances and Functional Applications*, IIT Roorkee, May 22, 2019 (**Invited**).
98. Kantesh Balani, "***Carbon Nanostructures for Superhydrophobic Applications***", QIP short-term course on *Carbon Nanomaterials - Recent Advances and Functional Applications*, IIT Roorkee, May 22, 2019 (**Invited**).
99. Kantesh Balani, "***Nanoindentation of Materials***", MANIT Bhopal, Apr. 06, 2019.
100. M. Mistri, S. Joshi, K.K. Kar, Kantesh Balani, "***Fretting of Plasma Sprayed Chromium Carbide Reinforced Tribaloy-T400 Coating***" 82nd Annual Session of Indian Ceramic Society' organized by Indian Ceramic Society, Jamshedpur, India, Jan. 10, 2019.
101. S. Awasthi, R. Maurya, C.P.Pandey and Kantesh Balani, "***Interfacial Mechanics of Carbonaceous Reinforcements in Electrophoretically Deposited Nickel***", I*nternational Conference on Chemical Science: National and Global Prospective* at Lucknow Cristian College, Lucknow, India, October 29-31, 2018 (**Invited**).
102. Kantesh Balani, "***Adhesion Strength of Bacteria on Biosurfaces***", Florida International University, Miami, FL, USA, Oct. 19, 2018 (**Invited**).
103. Kantesh Balani, "***The Fascinating World of Materials***", The Ohio State University, Columbus, OH, USA, Oct. 16, 2018 (**Invited**).
104. S. Awasthi, C.P. Pandey, Kantesh Balani, "***Synergistic Role of Carbonaceous Reinforcements on Multi Length Scale Tribology of Electrophoretically Deposited Nickel-Boron Nitride Coatings***" *Advances in Surface Engineering, Materials Science & Technology 2018*, Columbus, OH, USA, Oct. 14-18, 2018 (**Invited**).
105. A. Bhattacharjee, A. Gupta, P. Murugan, P. Sengupta, S. Matheshwaran, I. Manna, Kantesh Balani, "***Antimicrobial Property of Zn Doped Hydroxyapatite***", *Surface Properties of Biomaterials, Materials Science & Technology 2018,* Columbus, OH, USA, Oct. 14-18, 2018.
106. A. Nisar, Kantesh Balani, "***Thermo-Mechanical Performance and Microstructural Correlation in $ZrB_2$-based Ultra-High Temperature Ceramic Composites***", *Advanced Materials for Harsh Environments, Materials Science & Technology 2018*, Columbus, OH, USA, Oct. 14-18, 2018.
107. F. Alam, Kantesh Balani, "***Quantification of Nanoscale Adhesion Force of Staphylococcus Aureus on the Surface of Biomaterials Using Atomic Force Microscopy***", *Surface Properties of Biomaterials, Materials Science & Technology 2018*, Columbus, OH, USA, Oct. 14-18, 2018 (**Invited**).
108. Kantesh Balani, "***Materials for Transformations***", 4th Indian International Science Festival, Indira Gandhi Prathisthan, Lucknow, Uttar Pradesh, India, Oct. 05-08, 2018 (**Invited Lecture**).
109. A. Nisar, Kantesh Balani, "***High Temperature Nanocomposite Ceramics for Hypersonic Applications***", *Faculty Development Program on 'Smart Materials'*, Allenhouse Institute of Technology, Kanpur, India, April 30, 2018 - May 5, 2018 (**Keynote Lecture**).
110. F. Alam, Kantesh Balani, "***Nano-characterization Tool for Assessing Adhesion Strength of Bacteria on Biomaterials***", *Faculty Development Program on 'Smart Materials'*, Allenhouse Institute of Technology, Kanpur, India, April 30, 2018 - May 5, 2018 (**Keynote Lecture**).
111. A. Nisar, S. Ariharan, T. Venkateswaran, Kantesh Balani, "***Thermal Damage of Ultra High Temperature Ceramic Composites***", *TEQIP*, Uttar Pradesh Textile Technology Institute (*UPTTI)*, Kanpur, India, Feb. 28, 2018 (**Invited Lecture**).
112. F. Alam, A. Kumar, and Kantesh Balani, "***Effect of Antibacterial Agents on The Bacterial Adhesion Strength in Polymeric Biocomposites***", International Conference on *Advanced*

*Materials and Processes: Challenges and Opportunities* (AMPCO-2017), IIT Roorkee, India, Dec. 01, 2017 (**Invited Lecture**).

113. A. Nisar, S. Ariharan, T. Venkateshwaran, N. Sreenivas, and Kantesh Balani, "***TaC-Based Ultra-High Temperature Ceramic Composites for Hypersonic Applications***", *National Conference on Nano Technology*, PSIT, Kanpur, Nov. 18, 2017.
114. F. Alam, A. Kumar, and Kantesh Balani, "***Adhesion Strength of S. Aureus Upon Addition of Antibacterial Ag and ZnO in Ultrahigh Molecular Weight Polyethylene Biocomposites***", Mechanical Engineering Department, National Institute of Technology Warangal, Nov. 10, 2017 (**Invited**).
115. F. Alam, A. Kumar, and Kantesh Balani, "***Reinforcement of Antibacterial Ag and ZnO in Ultrahigh Molecular Weight Polyethylene Biocomposites: Deadhesion Strength of S. Aureus***", *Daya Swoop Memorial Lecture* for The Institution of Engineering (India), Kanpur Chapter Annual General Meeting on Oct. 29, 2017 (**Invited**).
116. A. R. Siddiqui, Kantesh Balani, "***Superhydrophobic Carbon Nanofiber Coating for Efficient Gravity Directed Oil Water Separation, Corrosion Protection and Remarkable Solar Evaporation***", *International Conference on Advance Materials, Textiles and Processes (ICAMTP)*, Oct. 15, 2017, Uttar Pradesh Textile Technology Institute (*UPTTI)*, Kanpur, India (**Invited Lecture**).
117. F. Alam, A. Kumar, and Kantesh Balani, "***Deadhesion of S. Aureus Upon Reinforcement of Antibacterial Ag and ZnO in Ultrahigh Molecular Weight Polyethylene Biocomposites***", *Nanoyantrika*, Sept. 17-20, 2017, Trivandrum, India. (**Invited lecture**).
118. A. Nisar, S. Ariharan, T. Venkateswaran, N. Sreenivas, Kantesh Balani, "***TaC-Based Ultra-High Temperature Ceramic Composites for Hypersonic Applications***", Sept. 05, 2017 at IIT Bombay, Mumbai, India. (**Invited lecture**).
119. Kantesh Balani, "***Biomaterials for Hip Joints***", *Prof. N.K. Batra Memorial Quiz*, Aug. 06, 2017, IIT Kanpur (India) (**Invited**).
120. Kantesh Balani, "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli***", *Massive Open Online Course Workshop*, Jun. 16, 2017, Pranveer Singh Institute of Technology, Kanpur, India (**Invited**).
121. A. Nisar, S. Ariharan, T. Venkateswaran, Kantesh Balani, "***$ZrB_2$ and TaC Based Ultra-High Temperature Ceramic Composites for Aerospace Applications***", *Design, Materials & Manufacturing Concerns in Production of Quality Engineering Goods*, Mar. 27-29, 2017, HBTI, Kanpur, India. (**Keynote Talk**).
122. Kantesh Balani, "***Nanoparticle Characterization- Electron Microscopy***", *Workshop on Synthesis, Characterization and Safety Assessment of Nanomaterials*, March 22-25, 2017, CSIR, Indian Institute of Toxicology Research, Lucknow (**Invited**).
123. Kantesh Balani, "***Processing and Cytocompatibility of Hydroxyapatite Biocomposites***", Quality Improvement Program on "*Additive Manufacturing*", Mar. 06-10, 2017, IIT Kanpur.
124. Ambreen Nisar, S. Ariharan, T. Venkateshwaran, N. Sreenivas, Kantesh Balani, "***Ultra-High Temperature Ceramic Composites for Hypersonic Applications***", Advances in Smart & Functional Materials 2017 (ASFM 2017), Jan. 13-14, 2017, AMPRI (Advanced Materials and Processes Research Institute), Bhopal (**Plenary Lecture**).
125. Rita Maurya, Abdul Rahim Siddiqui and Kantesh Balani, "***An Environmental Friendly Phosphate Chemical Conversion Coating on Novel Mg-9Li-7Al-1Sn and Mg-9Li-5Al-3Sn-1Zn Alloys for Corrosion Protection***", 70$^{th}$ Annual Technical Meeting (70$^{th}$ ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
126. Aditi Pandey, Rajeev Kumar Sharma, Rita Maurya, Vinod Kumar Nigam and Kantesh Balani "***Development of Hydroxyapatite based Antioxidant Composites for Orthopedic Applications***", 70$^{th}$ Annual Technical Meeting (70$^{th}$ ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.

127. Siddiqui Abdul Rahim, Rita Maurya and Kantesh Balani, "***Process for Synthesizing a Stable Superhydrophobic Carbon Nanofiber Coating on Various Substrates***".
128. Ambreen Nisar and Kantesh Balani, "***Role of Interfaces on Microstructural, Mechanical and Multi-length Scale Wear Mechanics of TaC-based Ultra-High Temperature Ceramic Composites***", 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur (**Invited**).
129. Fahad Alam, Anil Kumar and Kantesh Balani, "***Role of Ag and ZnO reinforcement on Tribological properties and bacterial adhesion on ultra-high molecular weight polyethylene***", 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
130. A. Nisar and Kantesh Balani, "***Effect of CNT addition on Corrosion Resistance of $ZrB_2$-20SiC Based Ultra-High Temperature Ceramic Composites under Plasma-Arc Jet Exposure***", (*International Conference on Advances in Materials and Materials Processing)* ICAMMP, Nov. 4-6, 2016, IIT Kharagpur (**Invited**).
131. Kantesh Balani, "***Exploring Length Scales in Biomechanics***", session remarks during Indo-German Frontiers of Engineering, May 19-22, Potsdam, Germany.
132. R.K. Sharma, Kantesh Balani, "***Effect of ZnO Morphology on the Mechanical, Tribological and Biological Properties of Ultra High Molecular Weight Polyethylene Biocomposites***", *2nd International Conference on Advancements and Recent Innovations in Mechanical, Production and Industrial Engineering* (*ARIMPIE-2016*), Apr. 15-16, 2016, NOIDA, India. (**Keynote address**).
133. Kantesh Balani, "***Paradigm of Functional Materials From Biological to Aerospace Applications***", Role of Metals in the Development of Non-Metallic Materials and Products. DMSRDE, Kanpur, Feb. 24, 2016 (**Invited**).
134. Kantesh Balani, "***Hydrophobicity: Analogy to Lotus Leaf***", Application of Nanotechnology in Textiles, Uttar Pradesh Textile Technology Institute (UPTTI), January 18-23, 2016, Kanpur, India (**Invited**).
135. A. Nisar, Kantesh Balani, "***High Temperature Oxidation of Spark Plasma Sintered TaC and $ZrB_2$ based Ultra-High Temperature Ceramic Composites***", *Ultra High Temperature Ceramics for Thermostructural Applications*, Materials Research Center, Indian Institute of Science Bangalore, Dec. 14, 2015, Bengaluru, India.
136. A. Nisar, S. Ariharan, Kantesh Balani, "***Role of SiC and Carbon nanotube Reinforcement on Fracture Properties of TaC***", *3rd International Conference on Nanostructured Materials and Nanocomposites (ICNM-2015)*, Dec. 12-14, 2015, Mathura, India (**Invited**).
137. Kantesh Balani, "***Cytocompatibility of Hydroxyapatite-Based Biocomposites***", International conference on *Frontiers in Materials Processing, Applications, Research & Technology (FiMPART)* 2015, Jun. 12-15, 2015, Hyderabad, India (**Invited**).
138. I. Bajpai, Kantesh Balani, B. Basu, "***Synergy of Static Magnetic Field Stimulation and Magnetisation towards Bactericidal Property of Multifunctional HA-$Fe_3O_4$ Biocomposites***", *2015 MRS Spring Meeting*, April 6-10, 2015, San Francisco, California, USA.
139. Kantesh Balani, "***Multifunctional Hydroxyapatite-Based Biocomposites***", National Conference on Innovations in Materials, Design and Manufacturing (IMDM-2015), March 27-28, 2015, HBTI, Kanpur, India (**Invited**).
140. Kantesh Balani, "***Processing and Cytocompatibility of Functionally Graded Hydroxyapatite Biocomposites***", *1st International Conference on Alumina and Other Functional Ceramics (AOFC-2015)*, Mar. 11-13, 2015, Kolkata, India (**Invited**).
141. S. Ariharan, N. Balaji, S.T. Aruna and Kantesh Balani, "***Phase Retention of YSZ in Plasma Sprayed YSZ-CNT Reinforced $Al_2O_3$ Matrix Composites for Thermal Barrier Coating***" *6th Asian Thermal Spray Conference*, November 24-26, 2014, Hyderabad, India.

142. S. Ariharan, Pradyut Sengupta, Ankur Agnihotri, N. Balaji, S.T. Aruna, Kantesh Balani, "***Oxidation and Protection of Graphite***", *6th Asian Thermal Spray Conference*, November 24-26, 2014, Hyderabad, India.
143. P. K. Mallik, B. Basu, Kantesh Balani, "***Novel Multistage Spark Plasma Sintered HA-$CaTiO_3$ Composites for Biomedical Application***" *NMD ATM 2014, 52nd National Metallurgist Day and 68th Annual Technical Meeting,* Nov. 12-15, 2014, Pune, India.
144. A. Nisar and Kantesh Balani, "***High Temperature Oxidation Studies of TaC-based Ultra-High Temperature Ceramic Composites***" *NMD ATM 2014, 52nd National Metallurgist Day and 68th Annual Technical Meeting*, Nov. 12-15, 2014, Pune, India.
145. S. Ariharan, N. Balaji, S.T. Aruna, Kantesh Balani, "***Phase Retention of YSZ In Plasma Sprayed YSZ-CNT Reinforced $Al_2O_3$ Matrix Composites for Thermal Barrier Coating***" *NMD ATM 2014, 52nd National Metallurgist Day and 68th Annual Technical Meeting*, Nov. 12-15, 2014, Pune, India.
146. A. Nisar, Kantesh Balani, "***High Temperature Oxidation Studies of TaC-based Ultra-High Temperature Ceramic Composites***" *NMD ATM 2014, 52nd National Metallurgist Day and 68th Annual Technical Meeting*, Nov. 12-15, 2014, Pune, India.
147. R. K. Sharma, Kantesh Balani, "***Morphological Dependence of Interfacial Strength in ZnO Reinforced Ultra High Molecular Weight Polyethylene Biocomposite***" *MS&T (Materials Science and Technology) 2014*, Oct. 12-16, 2014, Pittsburgh, USA (**Invited**).
148. A.K. Patel, Kantesh Balani, "***Tribological Performance of Carbon Nanotube and Aluminum Oxide Reinforced Ultra High Molecular Weight Polyethylene Biocomposite***" *MS&T (Materials Science and Technology) 2014*, Oct. 12-16, 2014, Pittsburgh, USA.
149. F. Alam, Kantesh Balani, "***Fretting wear of zinc oxide and silver nanoparticles reinforced ultra high molecular weight polyethylene biopolymer composites***" *MS&T (Materials Science and Technology) 2014*, Oct. 12-16, 2014, Pittsburgh, USA.
150. Vishnu Shukla, Katharina Herkendell; Anup Patel; Kantesh Balani; "***Mathematical Model to Predict The First Mode Fracture Toughness of Hydroxyapatite-Carbon Nanotube-Silver Nanocomposite***" *MS&T (Materials Science and Technology) 2014*, Oct. 12-16, 2014, Pittsburgh, USA.
151. Kantesh Balani, "***Processing and Cytocompatibility of Hydroxyapatite Biocomposites***"**,** *Indo US Collaboration for Engineering Education*, Jul 11, 2014 (Online webinar).
152. Md. Faisal, A.Gupta, S. Shervani, Kantesh Balani, A. Subramaniam, "***Enhanced Hydrogen Storage Properties In Mg-Base Hybrids Synthesized By Accumulative Roll Bonding***", 20th World Hydrogen Energy Conference-2014 (WHEC-14), Gwangju, South Korea, June. 15-20, 2014.
153. P. Kumar, N. Mahato, V. Singh, R. Choudhary, Kantesh Balani, "***Pulsed Electrodeposition of Nano-Crystalline Ni with Uniform Co-Deposition of Micron Sized Diamond Particles on Annealed Copper Substrate***" *BTTD (Behind the Teachers Desk) Seminar,* on 27-28 March 2014, National Metallurgy Laboratory Jamshedpur, India.
154. A. Gupta, Md. Faisal, S. Shervani, Kantesh Balani, A. Subramaniam, "***Effect Of Carbon Addition On Hydrogen Storage Properties Of Mg-$Lani_5$ Hybrids***", *International Conference On Emerging Materials And Processes (ICEMP) – 2014*, Feb. 26-28, 2014, CSIR-IMMT, Bhubaneswar, Odisha, India.
155. S. Shervani, Md. Faisal, A. Gupta, Kantesh Balani, A. Subramaniam, "***Hydrogen Storage in Mg-$Mg_2Ni$ Hybrids via Accumulative Roll Bonding***", *International Conference On Emerging Materials And Processes (ICEMP) – 2014*, Feb. 26-28, 2014, CSIR-IMMT, Bhubaneswar, Odisha, India.

156. R. K. Sharma and Kantesh Balani, "***Tribological Properties of Antibacterial ZnO-UHMWPE Biocomposites***". *International Conference On Emerging Materials And Processes (ICEMP) – 2014*, Feb. 26-28, 2014, CSIR-IMMT, Bhubaneswar, Odisha, India.
157. R. K. Sharma and Kantesh Balani, "***Cytocompatibility and Bactericidal Property of ZnO-UHMWPE Biocomposites***". *International Conference on Polymer Materials Science and Engineering 2013*, Nov. 14-15, 2013, Venice, Italy.
158. A.K. Patel, Kantesh Balani, "***Correlation of Wettability with Surface Energies and Tribology of Functionalized Multi-walled Carbon Nanotube (f-CNT) and $Al_2O_3$ Reinforced Ultra High Molecular Weight Polyethylene Bionanobiocomposites***". *Indian Institute of Metals, Annual Technical Meeting*, Nov. 12-13, 2013, IIT BHU, Varanasi, India.
159. J. Nair, V. Singh, Kantesh Balani, "***Microstructure Analysis using Object Oriented Finite Element Methods and Study of Stress Patterns***". *Indian Institute of Metals, Annual Technical Meeting*, Nov. 12-13, 2013, IIT BHU, Varanasi, India.
160. V. Kumar, R. Shekhar, Kantesh Balani, "***Corrosion behavior study of novel Mg-Li-Al based alloys in dilute chloride solution***". *Indian Institute of Metals, Annual Technical Meeting*, Nov. 12-13, 2013, IIT BHU, Varanasi, India.
161. P. Kumar, V. Singh, N. Mahato, R. Choudhary, Kantesh Balani, "***Pulsed Electrodeposition of Nanocrystalline Ni with Uniform Co deposition of Micron Sized Diamond Particles on Annealed Copper Substrate***". *Indian Institute of Metals, Annual Technical Meeting*, Nov. 12-13, 2013, IIT BHU, Varanasi, India.
162. A.K. Patel, Kantesh Balani, "***Silane Functionalized Multiwalled Carbon Nanotubes and its Reinforcing Effects on UHMWPE /$Al_2O_3$ Biocomposites***", *2nd International Conference on Biomaterials Science in Tsukuba*, Japan (ICBS2013), Japan- Tsukuba, Mar. 19-22, 2013.
163. Kantesh Balani, "***Role of Alumina Addition on the Mechanics, Tribology and Cytocompatibility of Hydroxyapatite Biocomposites***", *Aluminas-2013*, CSIR-Central Glass & Ceramic Research Institute, Jadavpur, Kolkata, India, Mar 7-9, 2013 (***Invited***).
164. N. Mahato, P. Mohapatra, S. Rawat, Kantesh Balani, "***Effect of Carbon Nanotube Reinforcement on The Phase Transformation of Zirconia***", *2013 TMS Annual Meeting & Exhibition*, San Antonio, TX, USA, Mar. 3-7, 2013.
165. N. Mahato, S. Ariharan, Kantesh Balani, "***Role of $CeO_2$ Addition on Catalytic Conversion of Plasma Sprayed $Al_2O_3$ Coatings***", *2013 TMS Annual Meeting & Exhibition*, San Antonio, TX, USA, Mar. 3-7, 2013 (***Invited***).
166. A. Gupta, S. Omar, Kantesh Balani, "***Enhanced Ionic Conductivity of CeO2 Reinforced YSZ Nano composite Electrolyte***". 4Th International Conference on Recent Advances in Composite Materials (ICRACM-2013), International Center Goa, Feb. 18-21, 2013.
167. P.K. Mallik, Kantesh Balani, B. Basu, "***Processing and Microstructure-Property of Multi Stage Spark Plasma Sintered Hydroxyapatite- Calcium Titanate Biocomposite***", *37th International Conference & Exposition on Advanced Ceramics & Composites (ICACC)*, Daytona Beach, Florida, Jan. 27 – Feb. 1, 2013.
168. Kantesh Balani, "***Materials- Thermal Processing and Micro Structural characterization (Material testing lab)***", Workshop on Virtual Laboratory, Indian Institute of Information Technology- and Design and Manufacturing, December 18, 2012.
169. A.K. Patel, Kantesh Balani, "***Role of Synergistic Reinforcement of Carbon Nanotubes and $Al_2O_3$ on Compression Molded Ultra High Molecular Weight Polyethylene Biocomposite***", BIND-2012 (*International Conference on Design of Biomaterials)*, Bangalore, Dec. 9-11, 2012 (***Invited***).
170. I. Bajpai, Kantesh Balani, B. Basu, "***Magnetic Characterization and Cytocompatibility of Spark Plasma Sintered HA-$Fe_3O_4$ Magnetic Biocomposites***", *2012 MRS Fall Meeting*, Boston, Massachusetts, Nov. 25-30, 2012.

171. Kantesh Balani, "***Carbon Nanotube Reinforced Tantalum Carbide as Ultra High Temperature Ceramic Composite***", Advances in Materials and Processing: Challenges and Opportunities (AMPCO), IIT Roorkee, Nov. 2-4, 2012 (***Invited***).
172. P. Sengupta, N. Balaji, S.T. Aruna, M.K. Samal, D. Sathiyamoorthy, Kantesh Balani, "***Oxidation of Plasma Sprayed SiC/$Al_2O_3$ Coatings on Graphite Substrate***", *Carbon Materials 2012* in BARC Mumbai, November 1-3, 2012.
173. Kantesh Balani, "***Hydroxyapatite Based Biocomposites for Bone Replacement***" Daya Swoop Memorial Lecture for The Institution of Engineers (India), Kanpur Chapter Annual General Body Meeting on Oct. 28, 2012 (***Invited***).
174. Kantesh Balani, "***Toughened and Functionally Graded Hydroxyapatite-Based Biocomposite*", *Asian Symposium on Materials & Processing*** (ASMP 2012), Chennai, India, Aug. 30-31, 2012.
175. Kantesh Balani, "***Ultra High Temperature TaC as Rocket Nozzle Insert***", Advances in Materials & Material Selection in Design (AM&MSD-2012), Kanpur, India, Aug. 24-25, 2012.
176. *A. Nisar, R. Sharma, Kantesh Balani*, "**Mechanical Properties of Spark Plasma Sintered ZnO Reinforced Hydroxyapatite",** National Workshop on Advanced Functional Materials and Structures (AFMS-2012), Allahabad, India, July 12-14, 2012.
177. N. Mahato, D. Lahiri, A. Agarwal, Kantesh Balani, "***Microstructure and Mechanical Properties of Multistructured Peacock Feathers***", presented in *2012 TMS Annual Meeting & Exhibition*, Orlando, FL, USA, Mar. 11-15, 2012 (***Invited***).
178. S. Ariharan, A. Keshri, A. Agarwal, Kantesh Balani, "***Role of Yttria Stabilized Zirconia on Fracture Toughness of Plasma Sprayed Aluminum Oxide Composite Coatings***", presented in *2012 TMS Annual Meeting & Exhibition, Orlando*, FL, USA, Mar. 11-15, 2012.
179. A. K. Dubey, Kantesh Balani , B. Basu, "***Enhanced cellular response on Hydroxyapatite-$BaTiO_3$ composite: Material for bone application***", *International Science Congress (ISC-2011) M*eeting, MRSCPS, Indore, MP, India, Dec. 24-25, 2011.
180. A. Gupta, S Sharma, Kantesh Balani, ***"Ceria doped 8 mol% yttria stabilized zirconia nanocrystalline electrolyte material for enhancement in ionic conductivity and low-temperature operation for Solid Oxide Fuel Cells"*** *ICAMMP-2011 (International Conference on Advances in Materials and Materials Processing)*, IIT Kharagpur, India, Dec. 9-11, 2011.
181. A. Gupta, S. Omar, Kantesh Balani, "***Ceria doped 8 mol% yttria stabilized zirconia nanocomposite electrolyte for enhanced ionic conductivity and low-temperature operation of Solid Oxide Fuel Cells***", presented in the *65$^{th}$ Annual Technical Meeting (ATM) of the Indian Institute of Metals (IIM)*, Hyderabad, India, Nov. 15-16, 2011.
182. Kantesh Balani, Md. A. F. Afzal, P. Kesarwani, K. M. Reddy, S. Kalmodia, B. Basu, "***Functionally graded hydroxyapatite-alumina-zirconia",*** presented in *MS&T 2011*, Columbus Ohio, USA, Oct. 14-18, 2011.
183. Md. A. F. Afzal, Kantesh Balani, P. Kesarwani, K. M. Reddy, S. Kalmodia, B. Basu, "***Functionally Stepped Hydroxyapatite-Alumina-Zirconia: Potential Bone-Implant",*** *Bio2011*, CGCRI, Kolkata, India, Jul. 21-23, 2011.
184. V. Kumar, Kantesh Balani, R. Shekhar, Govind***, "Effect of hot rolling on microstructure and texture evolution of Mg-Li alloy***". *5$^{th}$ Light Metals Technology Conference*, Luneburg, Germany, 19-22 July, 2011.
185. A. Gupta, D. Lahiri, S. Ghosh, G. Tripathi, B. Basu, A. Agarwal, Kantesh Balani, "***Micro Tribology of Compression Molded Ultrahigh Molecular Weight Polyethylene Reinforced with Aluminum Oxide, Hydroxyapatite and Carbon Nanotubes"***, presented in *TMS 140$^{th}$ Annual Meeting and Exhibition*, San Diego, CA, Feb. 27 – Mar. 3, 2011.

186. M. R. Joshi, S. Ariharan, Kantesh Balani, "***Carbon Nanotube Reinforced Aluminium Oxide: Processing, Characterization and Modeling"***, presented in *ALUMINAS 2010*, CSIR-Central Glass & Ceramic Research Institute, Jadavpur, Kolkata, India, Nov. 25-27, 2010 (***Invited***).
187. Kantesh Balani, V. Kumar, P. Kempe, Govind, R. Shekhar, "***Nano-Mechanical Characterization of Mg-Li Based Alloys"***, *Indian Institute of Metals, Annual Technical Meeting*, Bangalore, India, Nov. 15-16 2010.
188. Kantesh Balani, "***Nanoindentation of $CeO_2$ doped YSZ Electrolyte of Solid Oxide Fuel Cell***", *Hysitron Webinar* in partnership with Materials Today (Elsevier), Oct. 28th, 2010.
189. V. Kumar, V.S. Raja, R. Shekhar, P. Mungole, P.P. Sinha, Kantesh Balani, "***Electrochemical Corrosion study of Novel Mg-Li Alloys***". *CORCON 2010 Corrosion Conference* and Expo 2010, Goa, India, Sept. 23 - 26 *2010*.
190. A. Rishabh, Kantesh Balani, "***Evaluation of Fracture Toughness of Carbon Nanotube Reinforced Nano-Aluminum Oxide Via Fractal Approach"***, *TMS 139th Annual Meeting and Exhibition*, Seattle, WA, Feb. 14-18, 2010.
191. Kantesh Balani, Y. Chen, S. Omar, A.K. Keshri, S. Sharma, K. Babu, J.C. Nino, S. Seal and A. Agarwal, "***Enhanced Ionic Conductivity of YSZ Electrolyte For Solid Oxide Fuel Cell***", *Hydrogen and Energy Storage*, Jan. 14th 2010, Indian Institute of Technology Kanpur (***Invited***).
192. Kantesh Balani, R. G. Batista, D. Lahiri, A. Agarwal, ***"Non-wetting of Lotus Leaf",*** National Metallurgist's Day, *Indian Institute of Metals Kolkata*, Nov. 16-17th 2009, Kolkata, India.
193. Kantesh Balani, A.K. Keshri, M. Joshi, D. Lahiri, S.R. Bakshi, J.E. Tercero, A. Agarwal, "***Nanotribology of Plasma Sprayed Hydroxyapatite Reinforced with Aluminum Oxide and Carbon Nanotubes***", *International Conference on Advanced Nanomaterials and Nanotechnology*, Dec. 9-11, 2009, Indian Institute of Technology Guwahati, India.
194. Kantesh Balani, J. Tercero, S. Kalmodia, S. Namin, D. Lahiri, T. Laha, N. Tsoukias, B. Basu, E. Lavernia, "***Cytocompatibility of Hydroxyapatite Reinforces with Aluminium Oxide and Carbon Nanotubes***", *The Fourth Asian Particle Technology Symposium (APT 2009)*, New Delhi, India, Sept. 14-16, 2009 (***Invited***).
195. P. Prakash, P. Jain, T. Mandal, Kantesh Balani, "***Electrophoretic Deposition of nanocrystalline Hydroxyapatite on Ti6Al4V substrate with Intermediate Titanium Oxide Layer***", *The Fourth Asian Particle Technology Symposium (APT 2009)*, New Delhi, India, Sept. 14-16, 2009.
196. Md. A. Faiz, P. Kesarwani, M. Reddy, B. Basu, Kantesh Balani, "***Spark Plasma Sintering of Functionally Graded Hydroxyaptite-Alumina-Zirconia***", *National Conference on Nanomaterials, Applications & Nanotechnology Applications*, Hyderabad, India, Sept. 4-5, 2009.
197. Kantesh Balani, Flavia C. Brito, Lidia Kos, Arvind Agarwal, "***Nanomechanical Property Evaluation of Murine's Tricuspid Heart Valve",*** *25th Southern Biomedical Engineering Conference***,** Miami, FL, May 15-17, 2009**.**
198. A.K. Keshri, Kantesh Balani, T. Laha, S.R. Bakshi, A. Agarwal, "***Comparative Study of Carbon Nanotubes/Plasma Interaction during Various Thermal Spray Processes***" Presented in *International Thermal Spray Conference-2009* held in Las Vegas, Nevada, May 4-7, 2009.
199. S. Kalmodia, D. Lahiri, A. Agarwal, B. Basu, Kantesh Balani, "***Superior Wear Resistance of Biocompatible Ultra High Molecular Weight Polyethylene Reinforced with Hydroxyapatite and Carbon Nanotubes***", *25th Southern Biomedical Engineering Conference***,** Miami, FL, May 15-17, 2009**.**
200. Kantesh Balani, Arvind Agarwal, "***Improving the Fracture-Toughness of Plasma Sprayed CNT - $Al_2O_3$ Nano-composite Coating"***, ***Processing and Fabrication of Advanced Materials,*** **Delhi, India, Dec 15-17, 2008.**

201. Kantesh Balani, Arvind Agarwal, "***Nanomechanical Properties of Ultra High Molecular Weight Polyethylene- Hydroxyapatite Composite Reinforced with Carbon Nanotubes", Processing and Fabrication of Advanced Materials,*** **Delhi, India, Dec 15-17, 2008.**
202. Kantesh Balani, A. Agarwal, Y. Chen, R. Anderson, S. Harimkar, E. Crumpler, N. Dahotre, "***Bio-compatibility and Tribology of Plasma Sprayed Hydroxyapatite-Carbon Nanotube Coatings"***. *24th Southern Biomedical Engineering Conference***,** El Paso, TX, April 18-20, 2008.
203. Kantesh Balani, S. Harimkar, N. Dahotre, A. Agarwal, ***"Multi-Scale Tribology of Plasma Sprayed Carbon Nanotube Reinforced Aluminum Oxide Nanocomposite Coating"***. Presented in *2008 TMS Annual Meeting & Exhibition*, New Orleans, LA, Mar. 9-13th 2008.
204. Kantesh Balani, A. Agarwal, ***"Plasma Sprayed Aluminum Oxide Nanocomposite Coatings Reinforced with Carbon Nanotubes: Processing, Microstructure and Mechanical Properties"***. Presented in *32nd International Conference and Exposition on Advanced Ceramics and Composites*, Daytona Beach, FL, Jan. 27-Feb. 1st 2008.
205. Kantesh Balani, T. Zhang, S. Bakshi, W. Li, A. Agarwal, "***Fracture Toughness Enhancement via Plasma Spraying of Insitu Grown CNT - $Al_2O_3$ Nano-composite Coating"***. Presented in *TMS (The Minerals Metals and Materials Society) 2007 Annual Conference*, Orlando, FL, Feb. 25- Mar. 1st 2007.
206. Kantesh Balani, Dr. Rebecca Anderson, Tapas Laha, Melanie Andara, Jorge Tercero, Dr. Eric Crumpler, Prof. Arvind Agarwal, "***Biocompatibility of Plasma Sprayed Carbon Nanotube Reinforced Hydroxyapatite Bioceramic Coating***". Presented in *ISRS (International Symposium for Research Scholars) 2006*, IIT Madras, Chennai, India, Dec. 18-20th 2006.
207. Kantesh Balani**, *"The World of Nanotechnology and Advanced Materials".*** Presented at *International Workshop on MEMS and Nanotechnology*, Coimbatore, India, Dec. 15th 2006 (***Invited***).
208. Kantesh Balani, Y. Chen, S.R. Bakshi, T. Laha, and A. Agarwal, "***Enhanced Fracture Toughening of Plasma Sprayed Aluminum Oxide-Carbon Nanotube Ceramic Composite".*** Presented in *RAMP 2006 (Recent Advances in Materials Processing)*, Coimbatore, India, Dec. 15-16th 2006.
209. Kantesh Balani, Tapas Laha, Srinivasa R. Bakshi, Arvind Agarwal, "***CNT Dispersion in Plasma Sprayed Nano-$Al_2O_3$ – CNT Nano-Composite Coating***". *MS&T (Materials Science and Technology) 2006 Conference*, Cincinnati, OH, Oct. 15-19th 2006.
210. Kantesh Balani, R. Anderson, T. Laha, M. Andara, J. Tercero, Arvind Agarwal, E. Crumpler, "***Biocompatibility of Plasma Sprayed Hydroxyapatite-CNT Nanocomposite Coating***". *MS&T (Materials Science and Technology) 2006* Conference, Cincinnati, OH, Oct. 15-19th 2006.
211. Kantesh Balani, T. Laha, R. Anderson, M. Andara, J. Tercero, E. Crumpler, A.Agarwal, "***Plasma Sprayed Bio-Ceramic Hydroxyapatite-MWNT Coating: Microstructural, Mechanical and Cell-Culture Studies***". *ITSC (International Thermal Spray Conference*, Seattle, Washington, May 14th -18th 2006.
212. Kantesh Balani, T. Laha and A. Agarwal, "***Plasma Sprayed Aluminum Oxide –Carbon Nanotube Nanocomposite Coating". TMS (The Minerals Metals and Materials Society) 2006 Annual Conference, San Anton***io, Texas, Mar. 12-16th 2006.

## CONFERENCE PROCEEDING PUBLICATIONS, POSTER PRESENTATIONS, AND BOOK REVIEWS

**1.** M. Mistri, S. Joshi, K. K. Kar, Kantesh Balani, "***Suspension Plasma Spray: An Industrially Emerging Route to Nanometric Deposition: A Case Study of Hybrid TiC Reinforced Tribaloy-T400 Coating***", Fourth International Conference on '*Nanotechnology for Better Living*', Apr. 06, 2019 at IIT Kanpur, Kanpur, India. (*Women Scientist Poster Presentation Award*).

2. M. Mistri, S. Joshi, K. K. Kar, Kantesh Balani, "***Effect of TiC Reinforcement to Tribaloy-T400 Plasma Sprayed Coating: Mechanical and Tribological properties***" *Students' Research Convention 2019*, IIT Kanpur, Mar. 31, 2019. (*2nd Best Oral Presentation in mechanical Engineering and Design*).
3. C. Nayak, Ariharan S, P. Kushram and Kantesh Balani, "***Ultra High Molecular Weight Polyethylene based compression molded nanocomposites and effect of interfacial strength and agglomeration of alumina, hydroxyapatite and carbon nanotubes reinforcements***" in 10th international conference on Advancements in polymeric materials (APM-2019), January (22-24), 2019 at CIPET, Guindy, Chennai, India.
4. R. Maurya, and Kantesh Balani, "***Nanomechanical Properties of Heat Treated Mg-Li-Al Based Alloys***", *Nanoyantrika*, Sept. 17-20, 2017, Trivandrum, India.
5. A, Nisar, and Kantesh Balani, "*Sintering mechanism and kinetics of spark plasma sintered TaC*", *Electron Microscopy Society of India Conference*, Chennai, Jul. 17-19, 2017.
6. S. Shervani, P. Mukherjee, G. Mishra, A. Gupta, K. Illath, A. Kumar, S. Sivakumar, P. Sen, Kantesh Balani and A. Subramaniam., "***Multi-mode Hydrogen Storage in Nanocontainers***". *International Conference on Materials Engineering (ICME- 2017)*, June 2-4, 2017, IIT Kanpur. (**Second prize** in Functional Materials)
7. A. Nisar, Kantesh Balani,"***Spark Plasma Sintering of Tantalum Carbide: Mechanism, Kinetics, Microstructural and Mechanical Properties***", *International Conference on Materials Engineering (ICME- 2017)*, June 2-4, 2017, IIT Kanpur.
8. A.K. Patel, F. Alam and Kantesh Balani, "***Tribological and Nanomechanical Analysis of Synergistic Reinforcement of Carbon Nanotube and Aluminum Oxide in Ultrahigh Molecular Weight Polyethylene***", *International Conference on Materials Engineering (ICME-2017)*, June 2-4, 2017, IIT Kanpur. (**Certificate of Merit** in Structural Materials)
9. S. Awasthi, and Kantesh Balani, "***Synergistic Effect of Carbonaceous Reinforcements on Microstructural, Magnetic, Electrochemical and Tribological Properties of Electrophoretically Deposited Nickel***", *International Conference on Materials Engineering (ICME- 2017)*, June 2-4, 2017, IIT Kanpur.
10. Aditi Pandey, Vinod Kumar Nigam and Kantesh Balani, "***Acquired Antioxidant and Antibacterial Activity by Hydroxyapatite-based Biocomposites***", *International Conference on Materials Engineering (ICME- 2017)*, June 2-4, 2017, IIT Kanpur. (**Third prize** in Functional Materials).
11. A. Gupta, S. Omar, Kantesh Balani, "***Ionic Conductivity of $CeO_2$-YSZ Nanocomposite for Electrolyte Application in Solid Oxide Fuel Cell***" *International Conference on Materials Engineering (ICME- 2017)*, June 2-4, 2017, IIT Kanpur. (**Certificate of Merit** in Functional Materials).
12. A. Singh, D. Patel, J. Ramkumar, Kantesh Balani, "***Wettability Test of Various Viscosity Fluid over Laser Textured Polymeric Surfaces***", *All India Manufacturing Technology, Design and Research (AIMTDR) Conference 2016*, College of Engineering Pune (India), Dec. 16-18, 2016.
13. Shikha Awasthi, Sneha Goel, Chandra Prabha Pandey and Kantesh Balani, "***Multi-Length Scale Tribology of Electrophoretically Deposited Nickel-Diamond Coatings***", 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
14. Alka Gupta, Shobit Omar and Kantesh Balani, "***Grain boundary mobility of CeO2 Reinforced 8 mol. % Y2O3 stabilized ZrO2 (8YSZ) ceramic***", 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
15. Ariharan. S and Kantesh Balani, "***Effect of multi-walled carbon nanotubes reinforcement in the bending, compression strength and fracture toughness of alumina-zirconia nanocomposite for structural application***", 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.

16. Anil Kumar, Fahad Alam and Kantesh Balani, " ***Effect of $Fe_3O_4$ and ZnO reinforcement on bioactivity and bacterial viability of hydroxyapatite based magnetic biocomposites***", 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
17. Anup Kumar Patel, Kantesh Balani, "***Effect of Multiwalled Carbon Nanotube Functionalization on Protein Adsorption and Osteogenic Differentiation in Aluminum Oxide Reinforced Ultrahigh Molecular Weight Polyethylene Nanocomposites***", 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
18. A. Nisar, S. Ariharan, Kantesh Balani, "***Microstructure and Thermal Stability of Spark Plasma Sintered CNT reinforced TaC and $ZrB_2$ based Ultra-High Temperature Ceramics***", *International Conference on Electron Microscopy and XXXVI Annual Meeting of the Electron Microscope Society of India (EMSI)*, Jul. 8-10, 2015, Mumbai, India.
19. M. Faisal, A. Gupta, S. Shervani, Kantesh Balani, A. Subramaniam, "***Enhanced Hydrogen Storage Properties in Mg-base hybrids synthesized by accumulative roll bonding***", 20th World Hydrogen Energy Conference, WHEC 2014, Vol. 2, pp 1058-1064.
20. S. Shervani, Md. Faisal, A. Gupta, Kantesh Balani, A. Subramaniam, "***Hydrogen storage in Magnesium based hybrids using severe plastic deformation***", International Conference on Hydrogen Storage Embrittlement and Applications (Hy-SEA 14), Brazil, Oct. 26-30, 2014.
21. A. Gupta, S. Shervani, Md. Faisal, Kantesh Balani, A. Subramaniam, "***Hydrogen Storage in Mg-$Mg_2Ni$-carbon hybrids***", 14th International Symposium on Metal- Hydrogen Systems (MH-14), United Kingdom, July. 20-25, 2014.
22. Md. Faisal, A. Gupta, Kantesh Balani, A. Subramaniam, "***Magnesium Based Hybrids via Accumulative Roll Bonding For Hydrogen Storage***", The 14th International Conference of the Union of Materials Research Societies in Asia (IUMRS-ICA 2013), Bangalore, Dec. 16-20, 2013.
23. R. K. Sharma, M. Agarwal, Kantesh Balani, "***Bactericidal Mechanism in Compression Molded ZnO-UHMWPE Biocomposites***", Poster presentation, International conference on Polymeric Biomaterials, Bioengineering & Biodiagnostics", New Delhi, India, October 27-30, 2014.
24. R.K. Sharma, A. Nisar, Kantesh Balani, ***"Mechanical and Tribological Properties of Antibacterial ZnO- UHMWPE Biocomposites",*** *2013 TMS Annual Meeting & Exhibition*, San Antonio, TX, USA, Mar. 3-7, 2013.
25. A.K. Patel, Kantesh Balani, "***Wettability and Tribological study of functionalized Carbon Nanotube and $Al_2O_3$ Reinforced Ultra High Molecular Weight Polyethylene Biocomposite"*** *International Conference on "Advances in Polymeric Materials*" (APM 2013), innovations in Materials & Product Development, Central Institute of Plastic Engineering and Technology, Lucknow, Mar. 01-03, 2013.
26. A.K. Patel, Kantesh Balani, "***Tribological and Mechanical Study of Functionalized Carbon Nanotube and $Al_2O_3$ Reinforced Ultra High Molecular Weight Polyethylene Biocomposites***" *International Conference (APA 2013) on "Polymers on the Frontiers of Science and Technology"*, European Polymer Federation (EPF) Punjab University, Chandigarh, Feb. 21-23, 2013.
27. A. Gupta, S. Omar, Kantesh Balani, "***Development of $CeO_2$–Yttria Stabilized Zirconia Nanocomposite Electrolytes For Solid Oxide Fuel Cells***". *2013 TMS Annual Meeting & Exhibition*, San Antonio, TX, USA, Mar. 3-7, 2013.
28. B. Fatma, Md. Faisal, Kantesh Balani, A. Subramaniam, "***Hydrogen Storage properties of composites of Mg with carbon and $Mg_2Ni$ produced by Accumulative Roll Bonding***", *Advances in Materials and Processing Challenges and Opportunities* (AMPCO 2012), Roorkee, Nov. 2-4, 2012.

**29.** Kantesh Balani, "***Toughened and Functionally Graded Hydroxyapatite-Based Biocomposite*", *Asian Symposium on Materials & Processing* (ASMP 2012), Chennai, India, Aug. 30-31, 2012.

**30.** Md. A.F. Afzal, S.Kalmodia, B.Basu, Kantesh Balani, "***Structural, mechanical and bactericidal properties of Silver reinforced carbon-nanotube/ hydroxyapatite composites***", *International conference on Nanoscience and Technology*, Hyderabad, India, Jan. 20-23, 2012.

**31.** K. S. Ramakrishna, Kantesh Balani and A. Upadhyaya, "***Effect of Compaction Pressure and Sintering Temperature on the Mechanical and Electrochemical Properties of Austenitic Stainless Steel (316L)"***, *65th Annual Technical Meeting (ATM) of the Indian Institute of Metals (IIM)*, Hyderabad, India, Nov. 15-16, 2011.

**32.** Vinod Kumar, Kantesh Balani, Rajiv Shekhar, Govind**, *"Effect of hot rolling on microstructure and texture evolution of Mg-Li alloy***". *5th Light Metals Technology Conference*, Luneburg, Germany, 19-22 July, 2011.

**33.** Kantesh Balani, "***Engineering of Hydroxyapatite Based Bioceramic Composites***", *Indian National Academy of Engineering*, Dec. 10th 2010, Visakhapatnam, India.

**34.** Milind R. Joshi, S. Ariharan, Kantesh Balani, "***Carbon Nanotube Reinforced Aluminium Oxide: Processing, Characterization and Modeling***". Proceedings of ALUMINAS 2010, Indian Ceramics Society (INCerS), Kolkata, India, Nov. 25-27 2010, pp 39-50 (Invited).

**35.** V. Kumar, V.S. Raja, R. Shekhar, P. Mungole, P.P.Sinha, Kantesh Balani, "***Electrochemical Corrosion study of Novel Mg-Li Alloys***". CORCON 2010 Corrosion Conference and Expo 2010, Goa, India, Sept. 23 - 26 *2010*.

**36.** M.R. Joshi, Ariharan S., Kantesh Balani, "***Fracture Toughness of 8 mol% Yttria Stabilized Zirconia Reinforced with Hydroxyapatite***". *Indian Institute of Metals, Annual Technical Meeting*, Bangalore, India, Nov. 15-16 2010 (**First Prize**).

**37.** S. Sharma, K.M. Reddy, A. Simpsons, B. Basu, Kantesh Balani, "***Nano-mechanical and Micro-Structural Characterization of $CeO_2$ Doped YSZ Electrolyte for Solid Oxide Fuel Cell***". *Indian Institute of Metals, Annual Technical Meeting*, Bangalore, India, Nov. 15-16 2010.

**38.** A. Gupta, D. Lahiri, S. Ghosh, G. Tripathi, B. Basu, A. Agarwal, Kantesh Balani, "***Tribological Behaviour of Ultrahigh Molecular Weight Polyethylene Composite Reinforced with Aluminum Oxide, Hydroxyapatite and Carbon Nanotubes Processed via Compression Molding***". *Indian Institute of Metals, Annual Technical Meeting*, Bangalore, India, Nov. 15-16 2010.

**39.** Kantesh Balani, R. G. Batista, D. Lahiri, A. Agarwal, ***"Non-Wetting of Lotus Leaf",*** *Annual Technical Meeting, Indian Institute of Metals Kolkata.* Nov. 16-17th 2009, Kolkata.

**40.** F.C. Brito, Kantesh Balani, A. Agarwal, L. Kos, "***Neural Crest Derived Melanocytes Affect the Biomechanical Properties of the Tricuspid Valve Leaflet***", 2009 Weinstein, *Cardiovascular Development Conference*, San Francisco, CA May 7-9th 2009.

**41.** C. Khanal , G. Vargas , Kantesh Balani , A. Keshri , C. Barbosa , A. Agarwal , R. Panepucci, "*Metal embedded Fiber Brag Grating Sensors*", *Physics Education 2009 APS March Meeting*, Pittsburgh, Pennsylvania, USA, March 16–20, 2009.

**42.** S. R. Bakshi, Kantesh Balani, A. Agarwal, "***Nanotribological Properties of Carbon Nanotube Reinforced Plasma Sprayed Aluminum-Silicon Alloy Composite Coatings***", *2009 TMS Annual Meeting & Exhibition*, San Francisco, USA, Feb. 15-19th 2009.

**43.** Kantesh Balani, A. Agarwal, Y. Chen, R. Anderson, S.Harimkar, E. Crumpler, N. B. Dahotre, ***"Bio-Compatibility And Tribology Of Plasma Sprayed Hydroxyapatite-Carbon Nanotube Coatings"***, *24th Southern Biomedical En*gineering Conference, El Paso, TX, Apr. 18-20th 2008.

**44.** Kantesh Balani, T. Laha, C. Yao, S.R. Bakshi, and A. Agarwal, "***Fracture Toughening of Plasma Sprayed Aluminum Oxide –Carbon Nanotube Nanocomposite Coating",*** Gordon Conference**,** Andover, New Hampshire, Aug. 13-18th 2006.

**45.** Kantesh Balani, G. Gonzalez, A. Agarwal, R. Hickman, J. S. O'***Dell, and S. Seal, "Microstructural Characterization and Mechanical Property Correlation of Vacuum Plasma Sprayed Tantalum Carbide***". 2006 NSF Desig[n,] Service, and Manufacturing Research and Grantees Conference, St. Louis, MO, July 24-27th 2006.

**46.** Kantesh Balani, G. Gonzalez, A. Agarwal, R. Hickman, and S.O. Dell, "*Synthesis And Characterization Of Vacuum Plasma Sprayed Tantalum Carbide*". ***Surface Engineering in Materials Science III Proceedings,*** 2005 TMS Annual Meeting, San Francesco, CA, Feb 13-17, (2005), pp 241-248.

**47.** Kantesh Balani, A. Agarwal and T. McKechnie, "*Near Net Shape Fabrication Via Vacuum Plasma Spray Forming*". ***Best Technical Paper*** at ***International Students and Research Scholars 2004*** on 20-22nd Dec. 2004, Chennai, India.

**48.** J. Kartikeyan, T. Laha, Kantesh Balani, A. Agarwal, and N. Munroe, "Microstructural and *Electrochemical Characterization of Cold Sprayed 1100 Aluminum Coating*", (Published in ***International Thermal Spray Conference (ITSC), Conference Proceedings***, Japan, May 2004).

**49.** Kantesh Balani and A. Agarwal. Book Review: "*Emerging Applications of Vacuum-Arc-Produced Plasma, Ion and Electron Beams*" edited by Efim Oks and Ian Brown (Published in ***Materials and Manufacturing Process***, Mercel Dekker).

**50.** T. Laha, Kantesh Balani, B. Potens, M. Andara, A. Agarwal, and S. Seal, "*Plasma Engineered Nanostructured Spherical Ceramic Powders*" ***Surface and Interfaces of Nanostructured Materials Conference Proceedings***, 2004 TMS Annual Meeting, Charlotte, (March 2004), pp 103-112.

**51.** T. Laha, Kantesh Balani, B. Potens, M. Andara, A. Agarwal, S. Patil and S.Seal, "*Plasma Engineered Nanostructured Spherical Aluminum Oxide Powders*". Poster Presentation, ***Florida American Vacuum Society (AVS)***, University of Central Florida, Orlando, (March 8-12th 2004).

**52.** T. Laha, and Kantesh Balani, "*The Electrochemical Behavior of Al-Based Nanostructured Composite Coating in Acidic Medium". Poster presentation in* ***TMS 133rd Annual Meeting and Exhibition, Charlotte, (March 2***004).

## ACADEMIC/ RESEARCH HONORS

- Awarded "***Excellence in Teaching 2023***" in the Department of Materials Science and Engineering, IIT Kanpur, on Sept. 05, 2023.
- Awarded '***Yadupati Singhania Memorial Chair***" Apr. 2022-Mar 2025 from J.K. Cotton Ltd., IIT Kanpur.
- Elected as ***Fellow of National Academy of Sciences (NASI) FNASc 2021,*** Nov. 2021, for exemplary contributions in the area of biomaterials and ultra high temperature ceramics.
- Elected as ***Fellow of Indian National Academy of Engineering (INAE) FNAE 2021,*** Nov. 2021, for exemplary contributions in the area of biomaterials and ultra high temperature ceramics.
- Elected as ***2021 Fellow*** of **ASM International** ***FASM 2021,*** May 2021, by the Board of Trustees for outstanding contributions in the areas of biomaterials and ultrahigh-temperature ceramics, and exemplary leadership in materials education.
- ***Editor in Chief*** of **Nanomaterials and Energy**" (ICE Publication), Jun. 2017- till date.
- ***Associate Editor***, **Journal of Thermal Spray Technology** (Springer) Since Jan. 2022.
- ***Principal Editor***, **Journal of Materials Research** (MRS Publishing) Since Jan. 2020.
- ***Key Reader*** of ***Metallurgical and Materials Transactions A*** (Springer) – Jan 2010 onwards
- ***Guest Editor***, **Coatings** (Special Issue: *Ultrahigh Temperature Ceramic Coatings*, May 2017).

- Awarded ***Nanomaterials and Energy* Prize for the year 2018** by *Institution of Civil Engineers* on Oct. 4, 2019, London, UK.
- Received ***2018 ASM-IIM Visiting Lecturer Award*** by ASM International & Indian Institute of Metals.
- Awarded prestigious "***Swarnajayanti Fellowship Award 2016-17***" by the Department of Science and Technology, Govt. of India, Nov. 17, 2017.
- ***One of the three shortlisted candidates*** for ***NASI-Scopus Young Scientist Award*** in year 2018 in the "*Innovation in Engineering and Physical Sciences*" category.
- Recipient of "***Metallurgist of The Year 2016***" in the "*Metal Science*" division instituted by *Ministry of Steel, Govt. of India*, on Nov. 14th 2016 during *National Metallurgist Day* celebration, Indian Institute of Technology, Kanpur, India.
- ***Guest Editor***, ***Journal of Thermal Spray Technology*** (International Thermal Spray Conference, ITSC 2015-2020, i.e. 5 years+ special issues), Springer.
- Served on the ***Editorial Board*** of ***Defense Science Journal*** (published by Govt. of India, DRDO, Two years: 2015-16).
- ***Outstanding Reviewer***,
  *Acta Biomaterialia Journal* (Elsevier), May 2014 & Dec. 2017; *Additive Manufacturing*, Aug. 2018; *Applied Surface Science* (Elsevier), May 2009 & Feb. 2014; *Carbohydrate Polymers*, Nov. 2018; *Carbon*, Mar. 2018; *Ceramics International*, Jul. 2017; *Composites Part B*, Apr. 2017; *Corrosion Science*, Jul. 2018; *International Journal of Hydrogen Energy*, Sep. 2018; *Journal of Alloys and Compounds*, Oct. 2018; *Journal of Mechanical Behavior of Biomedical Materials*, May 2017; *Journal of Thermal Spray Technology*, Apr. 2017; *Materials Science and Engineering C*, Apr. 2018; *Surface & Coatings Technology*, Dec. 2017; *Vacuum*, Dec. 2016
- Awarded ***Young Scientist Award 2014*** by *Centre for Education Growth and Research*, India International Centre, Delhi, Jul. 17, 2014.
- Selected to receive ***IEI Young Engineers Award 2013-2014*** in *Metallurgical and Materials Engineering* discipline by The Institution of Engineers (India), Bangalore, Feb. 26, 2014.
- Recipient of ***P. K. Kelkar Research Fellowship*** (Jun. 2013-May 2016) towards excellent publication record, teaching skills, and performing administrative duties at IIT Kanpur.
- **Editor** of ***special thematic issue*** on "*Solid Electrolytes: Emerging Global Competitors For Satisfying Energy Needs*" in Journal *Nanomaterials and Energy*, ICE Publications, Sept. 2012.
- ***Letter of appreciation*** from Chairman, Academic Senate, for ***extraordinary teaching*** the course MSE617 (Mathematics and Computational Methods) in Fall 2011.
- Recipient of "***2012 TMS Materials Processing & Manufacturing Division Young Leader Professional Development Award***" during TMS 2012 Annual Meeting Mar. 11-15, 2012 at Orlando, FL, USA.
- Awarded ***Materials Science and Engineering C Young Researcher Award* 2011** by Elsevier for exceptional research efforts involving materials for biological applications on Nov. 29, 2011, Boston, USA.
- Received ***INAE (Indian National Academy of Engineering) Young Engineer Award 2010*** on Dec. 10th 2010, Visakhapatnam, India.
- Have been chosen for ***National Academy of Sciences, India*** (NASI) ***Young Scientist Platinum Jubilee Award*** 2010, which was presented on Dec. 4th 2010, Jaipur, India.
- Received "***Young Metallurgist of the Year***" award 2010 instituted by *Ministry of Steel, Govt. of India*, on Nov. 14th 2010 during *National Metallurgist Day* celebration, Bangalore, India.
- ***Young Scientist Award*** 2009 in Materials Science division by ***Indian Science Congress Association*** on Jan. 5th 2010, Trivandrum, India.

- Awarded ***Dr. R.L. Thakur Memorial Award-2009*** from the ***Indian Ceramic Society*** on Dec. 11th 2009, Trivandrum, India.
- ***Faculty Advisor*** for "***Material Advantage @ IIT Kanpur***" since Dec. 2008 (charter Sept. 2009).
    i. **Won** the "***Chapter of Excellence***" 2022-23 during Fall 2023 Membership Challenge along with US$450 prize from ASM International.
    ii. Won "***Most Creative Recruitment Strategies***" during Fall 2023 Membership Challenge along with US$500 prize from ASM International.
    iii. **Won** the "***Chapter of Excellence***" 2021-22 during Fall 2022 Membership Challenge along with US$450 prize from ASM International.
    iv. Won "***Most Creative Recruitment Strategies***" during Fall 2022 Membership Challenge along with US$500 prize.
    v. Won "***Chapter of Excellence***" 2020-21, for the Year 2020-21 among other 100+ chapters worldwide along with award money of $450.
    vi. Won "***Most Creative Recruitment Strategies***" during Fall 2021 Membership Challenge along with US$500 prize.
    vii.
    viii. Won "***Most Students Recruited Award***" during Fall 2020 membership Challenge, with award money of US$1000.
    ix. Won "***Chapter of Excellence Award***" during 2019-20, with award money of US $450 from ASM International.
    x. Won "***Most Students Recruited Award***" during Fall 2019 membership Challenge, with award money of US$1000.
    xi. Bagged "***Second Place***" (with a cash prize of US$150) in the ACerS Next Top Demo Contest 2017 for making a technical movie on ceramics titled, "*Oneness with the infinite*", directed and edited by Mr. Arjak Bhattacharjee and Ms. Shruti Dubey.
    xii. Chapter has received "***Most Creative Recruitment Strategies Award***" in Fall 2011 with a cash award of *US$ 250.*
    xiii. Chapter bagged "***Most Students Recruited***" membership challenge in Fall 2009 with a *cash prize of US$ 500* competing against more than 60 active chapters worldwide.

- Selected by *National Phi Beta Delta Honor Society* to receive "***2007 David Merchant International Student Achievement Award***" owing to superior scholastic achievements. Annually only one international scholar is presented such a prestigious award worldwide. It consists of awarding $500 check with the acknowledgment certificate. Among more than 150 chapters worldwide, as president of Phi Beta Delta –Zeta Alpha Chapter at FIU, I received "*Eileen M. Evans Overall Outstanding Chapter for 2006-07*".
- Inducted *as full-member* in ***Sigma Xi*** honor society in Oct. 2007.
- Received "***2006-07 Dean's Award***" for highly productive doctoral student in the College of Engineering, FIU, with monetary award of $2000.
- Received "***Dissertation Year Fellowship"*** to pursue doctoral research at Florida International University, 2006-07.
- Selected to attend *research-proposal writing workshop* organized by ***National Science Foundation***, Aug. 22-23, 2007, University of Fairbanks, Alaska, USA.
- Awarded "***Best PhD Student***" by Department of Mechanical and Materials Engineering, FIU, for maintaining best grade point average, Spring 2005.

- Awarded "***National Science Foundation (NSF) Travel Scholarship***" to present a student poster during NSF Design and Manufacturing Innovation Conference at St. Louis, MO, July 24-27th 2006.
- ***Won*** a team technical quiz competition "***Materials Bowl***" during 2007 TMS (The Minerals, Metals and Materials) Annual meeting held in Orlando, Feb. 24-Mar. 1st, 2007. Overall twelve teams participated from colleges such as *Georgia Tech., Carnegie Mellon, Colorado School of Mines*, etc.
- Recipient of **RCTF** (*Research Challenge Trust Fund*) **Fellowship** for potential and capability in research at University of Kentucky during 2001-02.
- Awarded ***Deutscher Akademischer Austausch Dienst (DAAD) Scholarship*****,** based on merit, to pursue M. Tech. Project at Materialprufungsanatalt (State Material Testing), University of *Stuttgart, Germany* (May2000-Feb.2001).
- Awarded ***Sudharshan Bhat Memorial Prize*** and ***S. Ananthramakrishnan Memorial Prize*** for "**Best Academic Record**" in Metallurgical Engineering branch for M.Tech. at IIT (Indian Institute of Technology) Madras, India, 2001.
- Awarded as **"*Best Outgoing Student*"** by Department of Metallurgical Engineering, P.S.G. College of Technology, Coimbatore, India for overall excellence in academics and sports (1999).
- Secured ***First Place*** in the **Graduate Scholarly Forum** paper presentation competition, organized by Graduate Students Organization, FIU, Spring 2005, and also in Spring 2006.
- **Phi Kappa Phi** Honor Society Member at FIU, 2005. Phi Kappa Phi is renown for academic excellence since its membership requires *GPA greater than 3.90 on the scale of 4.0*.
- Secured ***Second Place*** in the **Graduate Scholarly Forum** paper presentation competition, organized by Graduate Students Organization, FIU, Spring 2007.
- Received "***Best Technical Paper***" award in the *International Symposium of Research Students (**ISRS**)* 2004, Dec. 2004, Chennai, India.

## LEADERSHIP HONORS

- ***Vice Chair***, *Indian National Academy of Engineering*, Kanpur Chapter, June 2020 -till date.
- **Secretary**, *Indian National Academy of Engineering*, Kanpur Chapter, May 2017 – May 2020.
- ***Chair***, *Indian Institute of Metals Kanpur Chapter 2012-13, and 2013-14.* **Led** to winning the ***Best Medium Chapter Award 2012***.
- ***Council Member***, *Indian Institute of Metals* (National Headquarters), 2012-13, and 2013-14.
- ***Secretary***, *Indian Institute of Metals Kanpur Chapter 2010-11* (and **won *Best Small Chapter Award 2010***) and again in 2011-12 (**won *Best Medium Chapter Award 2011***) India.
- ***Faculty Advisor*** of *Material Advantage at IIT Kanpur (2009-till date),* which has (i) **won** the "***Chapter of Excellence***" four times in a row (i.e. for 2022-23, 2021-22, 2020-21, 2021-20, with award money of US $450 from ASM International, (ii) **won** "***Most Students Recruited Award***" twice during Fall 2020 and Fall 2019 membership Challenge, with award money of US$1000 and during Fall 2009 (with citation and award of US$500) from ASM International, (iii) **won** "**Most Creative Recruitment Strategies Award**" thrice in a row during Fall 2023, Fall 2022, Fall 2021 (with award money of US$500) and also during 2011 Fall Membership Challenge, which includes citation and cash award of US$ 250.00 from ASM International.
- ***Founder, Secretary and Chair***, *Material Advantage* at FIU, 2004-07. Material Advantage at FIU has received "***Chapter of Excellence"*** continuously *four times in a row* (2003-04, 2004-05, 2005-06, and 2006-07: since its inception) competing with more than 120 chapters worldwide.

Chapter has been also *winning* "***World Materials Day Contest***" since the last three years 2004-05, and 2005-06, 2006-07.

- Selected by *National Phi Beta Delta Honor Society* to receive ***"2007 David Merchant International Student Achievement Award"*** owing to superior scholastic achievements. Annually only one international scholar is presented such a prestigious award worldwide. It consists of awarding $500 check with the acknowledgment certificate. Among more than 150 chapters worldwide, as president of Phi Beta Delta –Zeta Alpha Chapter at FIU, I received "***Eileen M. Evans Overall Outstanding Chapter for 2006-07"***.
- ***Student Advisor,*** *Child Rights and You (CRY) America Action Center* at FIU, Miami, FL, 2006-07. CRY America at FIU is a *service organization* linked to serving under privileged children especially in India. The direct projects supported by CRY Inc. are available at http://america.cry.org/project_browse.asp.
- Nominated by Florida International University for "***Who's Who Among Students in American Universities & Colleges***" Yearbook *2005*. This elite edition circulates on the coffee-table of dignitaries around the world.
- Selected for prestigious ***Arthur E. Focke LeaderShape*** award for the Year 2004. One among six *selected worldwide* for the scholarship sponsored by professional **American Society of Metals** Foundation.
- ***Chair***, *Material Advantage at FIU*, 2006-07.
- ***President***, *Phi Beta Delta Honor Society*, FIU, 2006-07.
- ***International Peer Mentor***, *International Students and Scholar Services (ISSS)*, FIU, 2005-07.
- ***International Student Ambassador***, FIU, 2005-06.
- ***Founder and President,*** *FIU Badminton Club,* FIU, 2003-06
- ***Action Center Leader,*** *Child Relief and You (CRY) America Action Center* at FIU, Miami, FL, 2004-07.
- *Graduate Student Representative,* ***Indian Students Association,*** FIU, 2004-07.
- ***Engineering Ambassador*** to the *College of Engineering* at FIU, 2003-04.
- *Member,* ***Departmental Curriculum Committee,*** Mechanical and Materials Engineering Department, FIU, Miami-FL, 2004.

## ADMINISTRATIVE:

Institute Level:

a. ***Dean of Resources and Alumni***, Mar. 2022 – till date
b. ***Coordinator***, Shivani Centre for Nurture and Reintegration of Hindi and Other Indian Languages, Nov. 2021- till date.
c. ***Head***, *Advanced Center for Materials Science*, Jun. 2020 – Apr. 2022.
d. ***Chair***, *Student Placement Office*, Aug. 2019-Jul. 2021.
e. Editor in chief, ***Antas*** (IIT Kanpur, Institute Hindi magazine), 2017-19.
f. ***Professor in-charge***, *Hindi Cell*, Jan. 2019 – Aug. 2019.
g. ***Associate Dean, Hall Affairs***, May 2016-Apr. 2019.
h. ***Chairman***, *Staff Gymkhana*, IIT Kanpur Feb. 2014- Feb. 2017 (IIT Kanpur Staff has ***won*** the overall *inter IIT sports championship* twice (2015, 2016) and was runner up in year 2014 that is conducted every December after students meet).
i. Led IIT Kanpur Badminton Team and ***won Gold*** medal in year 2022 (IIT Delhi), ***silver*** in year 2019 (IIT Bombay).
j. ***Warden in-charge***, Hall of Residence IV, IIT Kanpur, May 2014-Apr. 2016.
k. ***Chairman***, ***Senate Elections Committee***, IIT Kanpur, 2013-14.
l. ***Warden*** (Mess and Canteen), Hall of Residence IV, IIT Kanpur, Oct. 2011-May 2014.
m. *Academic Performance Evaluation Committee member*, 2011-12, 2012-13.

n. *Senate Scholarships and Prizes Committee* member 2010-11.
o. *Secretary, Faculty Club*, 2009-10, 2011-12.
p. *Faculty Guardian*, 2009-2013.

Department Level:

q. MSE Awards Committee & Space Committee, 2020-21
r. *MSE Staff-Affairs committee*, 2019-20.
s. *MSE Department Annual Report & Director's report*, 2018-19.
t. *MSE Departmental* Summer/Winer Training/Internship 2014-15, 2015-16, 2017-18.
u. *MSE Senate Library Committee* 2017-18.
v. *MSE Departmental* Space Committee 2014-15.
w. *MSE Departmental Under Graduate Committee* (member) 2013-14, 2015-16.
x. Computer Coordinator, MSE Dept. 2013-14.
y. *MSE Departmental Under Graduate Committee* ***Convener***, 2011-12, and 2012-13.
z. Departmental *B. Tech. Project evaluation committee*: 2008-09/09-10/11-12.
aa. Professional- and Student- *Seminar In-charge*, Fall 2008 – Spring 2010.

## PROFESSIONAL AFFILIATION

| **Name of Professional Body** | **Year of Membership** |
|---|---|
| The Minerals Metals and Materials Society | Since 2003 |
| Indian Institute of Metals | Since 2008 |
| American Society for Metals | Since Sept. 2009 |
| Association of Iron and Steel Tech. | Since Sept. 2009 |
| American Ceramics Society | Since Sept. 2009 |
| Indian Ceramics Society | Since 2010 |
| Indian Nuclear Society | Nov. 2011 |
| Materials Research Society | Since Jan. 2020 |
| Society for Biomaterials and Artificial Organs (India) | Since Jun. 2021 |

## TRAINING/MENTORING/ TUTORING (50+ students)

a. Ms. Vaishnavi Srivastava (HBTU Kanpur) and Ms. Gaurika Mathur (Delhi Public School Kanpur) in Summer 2023.
b. Mentored Ms. Medha Gupta, Mr. Nivedan Amarnani (IIT Kanpur), Mr. Varad Agarwal (IIT Kanpur) and Mr. Devendra Nama (SURGE scholar) in summer 2022.
c. Mentored Mr. Rushik (IIT Gandhinagar)/ Mr. Mainak (Govt. Coll. Engg. & Ceram. Tech. Kolkata), Mr. Vishal (Nat. Inst. Engg., Mysuru), & Ms. Saloni/ Mr .Nivedan (from IIT Kanpur) during Summer 2021.
d. Mentored *Mr. Priyansh Singh*, Delhi Technological University (May-Sep. 2020) & *Mr. Rajneesh Pandey*, Maulana Azad National Institute of Technology Bhopal (May-Aug. 2020)
e. Mentored *Ms. Aayushi Chauhan* & *Ms. Sonali Gupta* (May-July 2019) from IIT Kanpur & *Mr. Rishabh Kundu* (NIT Rourkela) from May-July 2019), *Mr. Rohneesh Sachan* (IIT BHU) from May-Jul. 2019.
f. Mentored *Mr. Kanu Raj* (IIT Delhi) and *Mr. Vidush Agrawal* (IIT BHU) in Dec. 2018,
g. Mentored *Ms. Shreya Surabhi*, *Mr. Suresh Panwar*, *Mr. Satyam Singh*, *Mr. Akhilesh K. Gupta* and *Mr. Dhruv Mittal* (May-July 2018) from IIT Kanpur.
h. Mentored *Mr. Arindam Raj* in Summer 2017.
i. Mentored *Mr. Abhineet Singh*, *Mr. Vikrant Trivedi*, *Ms. Swati*, and *Ms. Utkarshita Kaushal*, CSJM University Kanpur from Aug. 2015- Apr. 2016.

j. Mentored *Mr. Ankur Agnihotri*, CSJM University Kanpur from Aug. 2013- Aug. 2014.
k. Mentored *Ms. Meenakshi Agarwal*, Amity Institute of Nanotechnology, Amity University, Noida from May-July 2014 (~10 weeks).
l. Mentored *Ms. Chaitali Garain*, NIT Durgapur, from May – July 2014 (~10 weeks) .
m. Mentoring *Ms. Akanksha Mohan* from CSJM University, Kanpur from Jul. 2013 – May 2014.
n. Mentored *Mr. Krishnendra Tripathi* from MPEC, Mandhana from Sep. – Dec. 2013.
o. Mentored *Mr. Jitin Nair*, Department of Materials and Metallurgical Engineering, National Institute of Foundry and Forge Technology (NIFFT), Ranchi from May-July 2013.
p. Mentored *Ms. Pratyasha Mohapartra* from National Institute of Technology, Rourkela, during Apr. – Jul. 2012 under SURGE (summer research grant for excellence) scholarship. Ms. Mohapatra received '***best project***' award during SURGE 2012.
q. Mentored *Ms. Surabhi Singh* from Central Institute of Plastics Engineering and Technology, June-July 2012.
r. Mentored *Ms. Katharina Herkendell*, ***Karlshrue Institute of Technology***, Germany, Apr.-June 2012.
s. Mentored *Ms. Ambreen Nisar Khan*, Aligarh Muslim University, Jan.–Jun. 2012. Currently, she is pursuing PhD in my group at IIT Kanpur.
t. Mentored two students under SURGE (Summer Undergraduate Research Grant for Excellence) scholarship *Ms. Sukriti Bhardwaj* from IIT BHU, and *Mr. Soumitra Sulekar* from VNIT Nagpur from May-Jul. 2011.
u. Mentored *Ms. Sukriti Bhardwaj* from IIT BHU during Dec. 2011.
v. Mentored *Mr. Pramanshu Trivedi* from Jul. 2011- Jul. 2012.
w. Mentored *Ms. Archana Prakash* from CSJM University, Kanpur, from July – Sep. 2010.
x. Mentored two students under SURGE (Summer Undergraduate Research Grant for Excellence) scholarship (*Mr. Savya Sachi*, and *Ms. Pallavi Kesarwani* during Jun.-Aug. 2010.
y. Mentored two students under SURGE (Summer Undergraduate Research Grant for Excellence) scholarship (*Ms. Pallavi Kesarwani* from NIT Nagpur, India, and *Mr. Ram Krishna Mishra*, from NIT Warangal, India) during Jun.-Aug. 2009.
z. Mentored 4 students (*Mr. Shubhra Bajpai, Mr. Manish Jain, Mr. Sachin Mishra* and *Mr. Saurabh Mishra*) during May 2009-July 2009.
aa. Mentored *Ms. Shilpi Goenka* from Punjab Engineering College during Dec. 2008-Jan. 2009.
bb. Mentored 30 (*thirty*) international students at FIU while serving as International Peer Mentor.
cc. Mentored *Ms. Debrupa Lahiri*, *Mr. Anup Kumar Keshri*, (post-graduate) *Mr. Jorge Tercero, and Mr. Riken Patel* (post-graduate) in Mechanical and Materials Engineering Fall 2006-Spring 2008. Mentored *Ms. Gabriela Gonzalez* (graduate) and *Ms. Melanie Andara* (undergraduate) in Mechanical and Materials Engineering.
dd. Mentored *Mr. Dayan Paez*, an undergraduate from ***MIT*** (***Massachusetts Institute of Technology***) for summer 2005 internship.
ee. Mentored *Mr. Raul Galindo* (now undergraduate at FIU) from Coral Gables- and *Mr. Francisco Vega* from Killian Senior high school in Miami during Fall 2005.
ff. Attended two day workshop on teaching skills by the "***Academy for the Art of Teaching***", Aug. 2004.

***TEACHING:***

***ESO203b*** (Partial Differential Equations): Awarded "**Excellent Tutor**" appreciation by Chairman, Academic Senate, IIT Kanpur, through student-survey feedback during 2012-13, Sem I.

***ESO205*** (Nature and Properties of Materials): Awarded "**Excellent Tutor**" appreciation by Chairman, Academic Senate, IIT Kanpur, through student-survey feedback during 2017-18, Sem I.

***MME 100*** (Introduction to Profession, 2008-2009, Sem II): ***UG Core course***

***MME250*** (Materials Characterization, 2009-2010, Sem II, 2010-2011, Sem II, 2011-2012, Sem II): ***UG Level Core Course with lab component.***

***MME331*** (Process Metallurgy Laboratory): Co-instructor, 2012-13, Sem II.

***MME605*** (Surface Phenomena and Characterization, 2009-2010, Sem I, 2010-2011, Sem I, 2011-2012, Sem I): PG/ Higher-level UG Course: ***Self-Developed Course.***

***MSE204A*** (Introduction to Biomaterials, 2016-17, Sem II, 2017-18, Sem II) Awarded "**Best Instructor**" during 2017-18, Sem II.

***MSE301*** (Phase Transformation, 2015-16, Sem I).

***MSE312*** (Functional Materials Lab): 2013-2014, Sem II, 2014-15, Sem II, 2015-16, Sem II, 2016-17, Sem II. Co-instructor, and one of the founders of this course.

***MSE480*** (Materials Degradation and Prevention): UG core-course, 2012-2013, Sem II.

***MSE 617*** (Mathematics and Computational Methods): ***PG Compulsory*** 2011-12, Sem I, and 2012-2013, Sem I (joint instructor). Received '**Extraordinary Teacher**' appreciation, by Chairman, Academic Senate, IIT Kanpur, through student-survey feedback in 2011-12, Sem I.

***MSE 634*** (Fundamentals of Spray Techniques, 2013-14, Sem I, 2017-18, Sem I): ***PG self-developed course***. Awarded "**Best Instructor**" twice (2013-14, Sem I & 2017-18, Sem I, appreciation by Chairman, Academic Senate, IIT Kanpur.

***MSE667A*** (Selection and Designing with Engineering Materials), 2019-20, Sem II, 2020-21, Sem II). Awarded "**Best Instructor**" 2020-21, Sem II, and **Best Instructor**" 2022-23, Sem II, appreciation by Chairman, Academic Senate, IIT Kanpur.

***MSE671A*** (Het Treatment and Surface Hardening, 2021-22, Sem I)

***MSE 676*** (Materials Failure: Analysis and Prevention, 2014-15, Sem II).

***MSE693A*** (Materials Science Applications in Life Sciences, 2018-19, Sem I & 2019-20, Sem I). Received '**Excellent Instructor**' appreciation, by Chairman, Academic Senate, IIT Kanpur, through student-survey feedback in 2018-19, Sem I.

***MSE 694A*** (Nanostructures and Nanomaterials: Characterization and Properties, 2022-23, Sem I, 2014-15, Sem I, 2016-17, Sem I). ***PG self-developed course***. Awarded **Best Instructor**" 2022-23, Sem I.

***TA201*** (Tutor: Manufacturing Processes –I, 2015-16, Sem II).

***TA201N- Manufacturing Processes II,*** 2008-2009, Sem I 2008-2009, Sem II.

***TA201*** (Manufacturing Processes –I, 2013-2014, Sem II, & 2018-19, Sem II). **UG institute core course.** Awarded "**Excellent Instructor**" appreciation by Chairman, Academic Senate, IIT Kanpur for 2013-14, Sem II.

## RESEARCH PROJECTS:

***A total of over INR 120M (~ US$ 1.45 M) with external funding of INR 97.4 M (~US$ 1.35M), and being the main PI for projects ~ INR 94.5M (US $ 1.3 M).***
***Successfully Completed 28 projects (6 projects ongoing)***

## COMPLETED PROJECTS:

1. **Board of Research in Nuclear Sciences** (Jun. 2013- Jun. 2016) ***Rs. 58.22 Lakhs***
**PI**: "*Oxidation of Graphite and Protective Coatings*".

2. **Indian Space and Research Organisation** (Jul. 2013-Jul. 2015) ***Rs. 21.94 Lakhs***
**PI**: "*Plasma Exposure Damage of Ultra High Temperature Ceramics*".

3. **Indian Space and Research Organisation** (Mar. 2012-Mar. 2014) ***Rs. 13.58 Lakhs***
***PI***: "*Role of Particle Size of Yttria Stabilized Zirconia on the Wear Resistance of the Plasma Sprayed Aluminum Oxide Coatings*"

4. **CARE grant from *IIT Kanpur*** (Dec. 2013) ***Rs. 56 lakhs***
**PI**: "*Non Contact Optical Profilometer*"

5. **Department of Science and Technology** (Jul. 2011-Jul. 2013) ***Rs. 29.48 Lakhs***
***PI***: *"Enhanced Ionic Conductivity of Solid Oxide Fuel Cell via nano-$CeO_2$ reinforcement in YSZ Electrolyte"*

6. **Naval International Cooperative Opportunities in Science and Technology Program** (NICOP) (Apr. 2012-Apr.2013) ***Rs. 21.45 Lakhs***
***PI***: "*Plasma Sprayed Nano-Ceria-Alumina Composite Coatings for Catalytic Conversion of Combustion Gases*"
Collaborator: Dr. Xiaolin Zheng (Stanford University, CA, USA)

7. **Virtual Laboratory project (MHRD)** (Jun. 2010-Mar. 2013) ***Rs. 43.84 Lakhs***
***Sole PI*****:** *"Material Response to Microstructural-, Mechanical- and Thermal- Stimuli"*.

8. **Department of Biotechnology** (May 2009- Oct. 2012) ***Rs. 52.03 Lakhs***
***PI***: "*Investigation on Developing Ultrahigh Molecular Weight Polyethylene-Hydroxyapatite - Carbon Nanotube Biocomposite for Biomedical Applications"*

9. **Indian Space and Research Organisation** (Mar. 2009-Nov. 2011) ***Rs. 15.50 Lakhs***
***Sole PI***: "*Corrosion protection of Mg-Li Alloys*"

**10. E-Book Development (MHRD)** (Apr. 2010-Apr. 2011) ***Rs. 32.21 Lakhs***
**Co-PI**: "*E-book on Materials Science and Engineering*"

**11. CARE grant from *IIT Kanpur*** (Nov. 2009) ***Rs. 45 lakhs***
**PI**: "*High Temperature Electrochemical Test Station*"

12. **Initiation Grant, IIT Kanpur** (Dec. 2008-Dec. 2009) ***Rs. 10 lakhs***
***PI***: "*Electrostatic Spraying of Bioactive Ceramic Reinforced Polymer Bio-coating*"

13. **Indian Space and Research Organisation** (Jul. 2015-Jul. 2017)**: *Rs. 28.8 lakhs***
**PI**: "*Physical Metallurgy of Mg-Li Based Alloys – Phase II*".

14. **Indian Space and Research Organisation** (Aug. 2014-Jun. 2017)**: *Rs. 27.6 lakhs***
**Co-PI**: "*Feasibility Study on Development of High Temperature and Ultra High Temperature Composites for TPS Applications*".

15. ***Department of Science and Technology*** (Dec. 2013- Dec. 2016) ***Rs. 52.3 lakhs***

**Co-PI**: "*Development of Higher Conductive Sc2O3-ZrO2 Based Electrolyte for Solid Oxide Fuel Cells*".

16. ***Lohia Corporation Limited*** (Jan. 2017 – Jan. 2018): ***Rs. 9.87 Lakhs***
**PI:** "*Investigation Of The Microstructural, Thermal And Mechanical Properties Of Polypropylene, Polyethylene And Polyurethane*".

17. **Indian Space and Research Organisation** (Aug. 2016- Aug. 2018)**: *Rs. 28.93 lakhs***
**PI**: "*Fabricating of Porous Copper with Carbon Nanotube Reinforcement for Loop Heat Pipe Application*".

18. **Lohia Corporation Limited** (Feb. 2018 – Feb. 2019): ***Rs. 11.51 Lakhs***
**PI:** "*Investigation of the Microstructure, Phase and Degradation of Polymeric Materials – Phase II*".

19. **Cieba Inc.: Rs. 9.62 lakhs (Jun. 2018-Mar. 2020)**
**Co-PI:** *Evaluation of Chemical A and Chemical C required for Polishing and Enhancing Durability of Ceramic Tiles*

20. **IMPRINT (Impacting Research Innovation and Technology), MHRD** (Nov. 2018-Aug. 2021)**: Rs. 44.5 lakhs**
***PI***: *High Temperature Materials for Thermal Protection Systems*

21. **Department of Biotechnology (DBT)** (Nov. 2015-Nov. 2020) *Rs. 11.41 lakhs* (Total: ***Rs. 500.60 lakhs***)
***Coordinator (IIT Kanpur):*** *Programme Support on Translational Research on Biomaterials for Orthopaedic and Dental applications"*

22. **Defence Materials Stores R&D Establishment (DRDO)**: Rs. 20.73 lakhs
***PI:*** *Hiring of Technical Services*, Sept. 2019- Jan. 2021

23. **SERB -TARE**: (Teachers Associateship To Research Excellence, Mar. 2019-Mar. 2022): **Rs. 10.05 lakhs**
***Co-PI***: Residual Life Assessment of Al2O3-YSZ-CNT based Thermal Barrier Coatings

24. **STC-IITK Cell: Vikram Sarabhai Space Center** (Jan. 2020 – Jul. 2022): **Rs. 23.00 lakhs**
***Co-PI***: Hydrogen Storage And Delivery System Based On Inexpensive Industrially Scalable Hybrids

**25. Indian Air Force** (Nov. 2021 – June 2022): **Rs. 2.02 lakhs**
**PI:** Characterization and testing of side-carriage of ramp-system

**26. Indian Air Force** (Nov. 2021 – June 2022): **Rs. 1.94 lakhs**
**PI:** Characterization and testing of ramp-roller

27. **STC-IITK Cell: Vikram Sarabhai Space Center** (Jan. 2020 – Jul. 2022): **Rs. 29.70 lakhs**
***PI:*** *Brazing of Ultra High Temperature $HfB_2$-$ZrB_2$ Based Ceramics*

28. ***Swarnajayanti Fellowship, Department of Science and Technology, Govt. of India*** (Mar. 2018-Mar. 2023): ***Rs. 136.38 Lakhs***
***PI:*** *"Hip Joint Replacement System with Enhanced Multifunctionality".*

**ONGOING PROJECTS:**

29. **Virtual Laboratory project – Phase II (MHRD)** (Sep. 2014 – Mar. 2026) ***Rs. 236.6 Lakhs***
***Coordinator*****:** *Integration of Virtual Labs at IIT Kanpur*

30. **Virtual Laboratory project – Phase III (MHRD)** (Apr. 2018 – Mar. 2026) ***Rs. 283 Lakhs***
***Coordinator*****:** *Integration of Virtual Labs at IIT Kanpur*

31. **Portescap** (Apr. 2023-Mar. 2024) **Rs. 23.75 lakhs**
**PI:** "*Hemo Compatible Surfaces for LVAD*"

32. **Integra Micro system** (Apr. 2023-Mar 2024) **19.05 lakhs**
**PI:** "*Facility Upgradation of Gold Sputtering Unit*"

33. **JK Cottons** (Apr 2022-Mar. 2025) Rs. 6.00 Lakhs
**PI:** Yadupati Singhania Memorial Chair

34. **Defence Research & Development Organisation** (Oct. 2022 – Nov. 2027) Rs. 111.23 lakhs
**PI:** DRDO Industry Academia Centre of Excellence

**UNDER CONSIDERATION/SUBMISSION:**

*35. SERB: Rs. 1.20 Crores (Rs. 62.2 lakhs for IIT Kanpur) - submitted*
**Co-PI** (IIT Kanpur) with Prof. Sanjay Kala & Prof. Richa Giri from GSVM Medical College *"Development of quercetin nanoparticles decorated bioactive glass 45S5 based ointment for treatment of diabetic foot ulcers: A product development and commercialization approach".*

*36. SERB: Rs. 1.26 crores (Rs. 62.2 lakhs for IIT Kanpur) - submitted*
**Co-PI** (IIT Kanpur) with Prof. Poonam Khanna & Dr. Ankur Kumar from PGIMER Chandigarh *"Development and evaluation of liposome based milk formula for combating micronutrients malnutrition among 2-5 year children: A dietary intervention randomized control trial".*

**OTHER Funds (Conference & Workshop):**

1. Bruker & Ducom Inc.: Rs. 2 lakhs
PI: Nanomechanics and Nanotribology Workshop 2019

2. Department of Science and Technology: Rs. 35.44 lakhs (May 2018)
PI: Organizing Indo-German Frontiers of Engineering 2018

3. Department of Science and Technology: Rs. 25.5 lakhs (Jan. 2017)
   PI: Organizing Indo-German Frontiers of Engineering 2017
   Additional support of Rs. 2 lakhs (1.25 lakhs by RSPL, and 0.75 lakhs by Lohia Corp).

4. Indian National Academy of Engineering: Rs. 10 lakhs (Jun. 2016)
   Co-PI: Organizing "National Frontiers of Engineering Conference" Jun. 23-25, 2016.

5. Department of Science and Technology: Rs. 38 lakhs (Apr. 2016)
   Session Chair, "Indo-German Frontiers of Engineering", May 19-22, 2016, Potsdam, Germany.

6. Office of Naval Research Global: US $5,000 (Apr. 2011)
   PI: Workshop on *Nano-Biomaterials CHAMPS (Characterization, Hierarchy, Advanced Material Processing and Surfaces)* Apr. 25-29, 2011 at IIT Kanpur

7. Department of Science & Technology: Rs. 50,000/- (Jan. 2010)
   + US $ 2,000 (from Hysitron, and Rs. 50,000 from Aimil Ltd. Sinsil Ltd.)
   PI: *Hydrogen & Energy Storage* (Jan. 14, 2011) at IIT Kanpur

8. Department of Science & Technology: Rs. 1,00,000/- (Dec. 2010)
   PI: *Materials Conclave* (Dec. 19-21, 2010) at IIT Kanpur

**GUIDANCE:**

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|---|---|
| **B. Tech.** | 25+ completed (2 UGPs ongoing) |
| **M. Tech.** | **32** completed (2 ongoing) |
| **Ph.D.** | **25** completed (9 ongoing) |
| **Interns** | 50+ guided |

**Post-Doctoral Researchers:**

| Name | Worked On | Duration | Current Position |
|---|---|---|---|
| Dr. Neelima Mahato | 1. Solid Oxide Fuel Cells<br>2. $CeO_2$-based catalytic conversion<br>3. Iridescence in peacock feathers<br>4. Electrodeposition of Diamond-Nickel | Mar. 2011- Oct. 2013 | Assistant Professor (Foreign Research Professor)<br>School of Chemical Engineering<br>Yeungnam University<br>Gyeongsan, Republic of Korea |
| Dr. Vandana Singh | 1.Synthesis of Polyaniline-Ceria Composites and Study their Dielectric Properties<br>2.Electrodeposition of Ni-diamond coatings | Nov. 2012-Nov. 2013 | Copenhagen, Denmark |

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|---|---|---|---|
| Dr. Anup Kumar Patel | Tribology of Ultra high Molecular weight polyethylene with functionalized CNT reinforcement | May 2017-Jun. 2018 | The Hebrew University of Jerusalem, Israel |
| Dr. Rajeev Sharma | Polypropylene Based Composites | Jan. 2017-Jan. 2018 | Coaching at FIIT JEE, Noida |
| Dr. Ambreen Nisar | Ultra High Temperature ceramics | May 2017-Jun 2018 | Post-doctoral researcher, University of British Columbia, Canada |
| Dr. Fahad Alam | Biopolymeric Materials | Jun 2018-Nov. 2018 | Postdoctoral researcher at Khalifa University, Abu Dhabi, UAE. |
| Dr. Mohsin Khan | Ultra High Temperature ceramics & Processing of $Al_2O_3$-YSZ Coatings | Sept. 2017- Jan. 2018 | Assistant Professor at NIT Srinagar |
| Dr. S. Ariharan | High Temperature Ceramic Coatings | Apr. 2018-Nov. 2018 | Post-doctoral fellow at IIT Chennai |
| Dr. Abdul Siddiqui | Activated Carbon Fiber Coatings | May 2018-Nov. 2018 & May 2020-Oct. 2020 | Post-doctoral fellow at Jiangsu University of Tech., Changzhou, China |
| Dr. Rita Maurya | Ultralight Mg-Li Alloys | Jun 2018-Dec. 2018 | Assistant Professor at NIT Hamirpur |
| Dr. Alok Bhaudauria | Thermal Barrier Coatings | Aug. 2020 – June 2022 | Post-doctoral researcher |
| Dr. Pragya Tripathi | Electrodeposited Cr- coatings from trivalent Cr electrolytic bath | Nov. 2020 – Jul. 2021 | Post-doctoral researcher |
| Dr. Deepak Khare | Development of Hemophobic Surfaces | June 2023-till date | |
| Dr. Shipra Bajpai | Ultra High Temperature Ceramics | Aug. 2022-Oct 2023 | Post-doctoral researcher at Argonne National Lab (since Nov. 2023) |
| Dr. Bhuvana T. | Coatings, Materials Development | Jan. 2023-till date | |

**Thesis supervised at IIT-Kanpur:**

**Doctoral Students (Ph.D.): Completed (25); PhD thesis submitted (2); Ongoing (8)**

| Students | Dissertation Title | Co-supervisor | Completion | Current Position |
|---|---|---|---|---|
| **Dr. Vinod Kumar** | Development of Corrosion Protection Mg Alloy for | Prof. Rajiv Shekhar | Dec. 2011 | ***Associate Professor at IIT Indore (since Apr. 2017)*** ***Assistant Professor*** at |

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|---|---|---|---|---|
| | Aerospace Application | | | *Malaviya National Institute of Technology, Jaipur*, India (Jan. 2012-Mar. 2017) |
| **Dr. Ashutosh Kumar Dubey** | Electric Field Stimulated Cell Response on Electrically Active Hydroxyapatite-$BaTiO_3$ Composite | Prof. Bikramjit Basu | Dec. 2011 | ***Assistant Professor*** at ***IIT BHU*** *(Since Dec. 2015)* ***JSPS Fellow:*** *May 2012-Dec. 2015* |
| **Dr. Prafulla K. Mallik** | Hydroxyapatite- $CaTiO_3$ Based Electrically Active Biocomposites | Prof. Bikramjit Basu | Jun. 2013 | ***Assistant Professor***, Indira Gandhi Institute of Technology, Orissa |
| **Dr. Indu Bajpai** | Magnetically Active Hydroxyapatite- $Fe_3O_4$ Based Biocomposites | Prof. Bikramjit Basu | Jun. 2013 | ***Post. Doctoral research***er, Yeungnam University Gyeongsan, Republic of Korea |
| **Dr. Ishani Shukla** | Model-Based Management Of Steel Making-Continuous Casting | Prof. Deepu Philip | May 2015 | **Completed.** On maternity break. |
| **Dr. Rajeev Sharma** | Role of ZnO morphology on Antibacterial Properties of Ultra High Molecular Weight Polyethylene (UHMWPE) Biocomposite | none | Apr. 2016 | ***Coaching at FIIT JEE, Noida Center.*** *(Also earlier faculty at PSIT, Kanpur)* |
| **Dr. Alka Gupta** | Role of Ceria Reinforcement in Yttria Stabilized Zirconia for Solid Oxide Fuel Cell | Prof. Shobit Omar | Jan. 2017 | *Guest Faculty at CSJM University Kanpur* |
| **Dr. Anup K. Patel** | Role of Synergistic Reinforcement of $Al_2O_3$ and Functionalized Carbon nanotubes (CNTs) in Ultra High Molecular Weight Polyethylene (UHMWPE) Biocomposite | none | Apr. 2017 | *Post-doctoral researcher at The Hebrew University of Jerusalem, Israel* |
| **Dr. Ambreen Nisar** | Processing and Characterization of TaC and $ZrB_2$ based Ultra-High Temperature Ceramic Composites | none | May. 2017 | *Post-doctoral researcher at Florida International University (Earlier at University of British Columbia, Canada)* |
| **Dr. Fahad Alam** | Quantification of Adhesion Strength of Cells on the Surface of Biomaterials | none | Jun. 2017 | *Post-doctoral researcher at Masdar Institute of Technology Abu Dhabi, UAE.* |
| **Dr. Suboohi Shervani** | Hydrogen Storage in Nanohybrids | Prof. Anandh Subramaniam | Sep. 2017 | *Post Doctoral Fellow at Université Laval Québec, Canada* |
| **Dr. Md. Faisal** | Hydrogen Storage on Mg-Based Hybrids | Prof. Anandh Subramaniam | Jan. 2018 | *Research Fellow, Brunel University London (Mar. 2022)* |

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| | | | | *Post-doctoral researcher at KAIST, Korea* |
| **Dr. Satish Kanhed** | Role of Porosity on the Mechanical Properties and Cytocompatibility of Hydroxyapatite Bioceramic | Prof. Anish Upadhyaya | Jan. 2018 | *Faculty at University of Steel Technology, Rajgarh (formerly O.P. Jindal University)* |
| **Dr. S. Ariharan** | Processing and Characterization of Yttria-Stabilized-Zirconia and Carbon-Nanotubes Reinforced $Al_2O_3$ Thermal Barrier Coatings | none | Apr. 2018 | *Scientist at Vikram Sarabhai Space Centre (Earlier, Post-doctoral researcher (University of Trencin, Slovakia) & NPDF scholar at IIT Madras* |
| **Dr. Rita Maurya** | Cytocompatibility and High Temperature Properties of Mg-Li based Biometallic Alloy | none | Jun. 2018 | *Assistant Professor at NIT Hamirpur since Jan. 2019* |
| **Dr. Siddiqui Abdul Rahim** | Catalytic Property of Ceria Based Composites | none | May 2018 | *Offer from KFUPM, Saudi Arabia, (Earlier, post-doctoral fellow at Jiangsu University of Technology, Changzhou, China)* |
| **Dr. Shikha Awashi** | Electrophoretic Deposition of Nickel Reinforced with Carbonaceous Reinforcement | Dr. C.P. Pandey, BBDU | May 2019 *(Thesis submitted in Apr. 2018)* | *Kothari post doctoral fellow at IISc Bangalore* |
| **Dr. Aditi Pandey** | Assisted Cell Growth in Ceria Reinforced Hydroxyapatite-ZnO Based Biocomposites | Dr. Vinod Nigam, BIT Mesra | Feb. 2019 | *Post Doctoral fellow at Taipei Medical University, Taipei, Taiwan* |
| **Dr. Anshul Gupta** | Hydrogen Storage in Mg-based Composites | Prof. Anandh Subramaniam | Feb. 2020 | *Assistant Professor at NIT Srinagar, Earlier Post-doc at Brussels* |
| **Ms. Abhilasha** | Effect of Texture on the Tribological and Biological Properties of Metallic Substrates | Prof. J. Ramkumar | Discontinued (Untimely demise) | *Untimely demise on Apr. 12, 2017* |
| **Dr. Pragya Tripathi** | Role of Ceramic and Carbonaceous Reinforcements on Mechanical, Tribological, and Anticorrosive Properties of Electrodeposited Cr-based Coatings | Prof. J. Ramkumar | Sep. 2020 | *HBL Power Systems (Apr. 2022) Post-Doctoral Fellowship at IISc Bangalore* |
| **Dr. Chinmayee Nayak** | Effect of UV and Gamma Irradiation on Mechanical and Tribological Properties of Cytocompatible Ultra-High Molecular Weight Polyethylene Based Biocomposites for Hip Joint Arthroplasty | none | Oct. 2021 | *Post Doctoral Fellow, University of Turku, Norway.* |
| **Dr. Rubia Hassan** | Spark plasma sintered $ZrB_2$-$HfB_2$ based Ultra High Temperature Ceramics | Prof. Shobit Omar | Feb. 2022 | *Post-doctoral fellow at IIT Kanpur (Prime Minister Research* |

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| | | | | *Fellowship)* |
| **Dr. Sudha** | Charge Transport Mechanism Of MIEC Double Perovskites-Based Composites For SOFC Application | Prof. Tanmoy Maiti | Aug. 2022 | *Open Seminar Aug. 2021* |
| **Dr. Shipra Bajpai** | Real-Life nose-cone $ZrB_2$-$HfB_2$ based Ultra High Temperature Ceramic Inserts for Re-entry Space Vehicles | Prof. Sudhanshu Shekhar Singh | Aug. 2022 | *Post-doctoral fellow at IIT Kanpur* |
| **Ms. Moumita Mistri** | Tribomechanical Study of Carbide-laden Plasma-sprayed Composite Coating | Prof. Kamal K. Kar | Thesis submitted in Dec. 2021 | *Open Seminar: Feb. 2021* |
| **Ms. Shivani Gour** | Quantitative analysis of early-stage transient adhesion between bioactive glass and planktonic bacteria | Prof. Navdeep Dhami & Prof. Abhijeet Mukherjee (Curtin University) | Thesis submitted in May 2023 | Open Seminar in Aug. 2022 |
| **Ms. Divya Rana** | Processing and Characterization of (Zr-Ta-W-Ti)C-SiC based High Entropy Carbide Reinforced with Carbon Nano Tubes, Graphite and Graphene Nano Platelets | none | Jan. 2024 | *Open Seminar in May 2023* |
| **Ms. Shruti Dubey** | On Ultra High Temperature Ceramics | none | | *Converted to Ph.D in May 2018.* |
| **Mr. Indrajeet Singh** | Effect of Texture on the Biological Response of Biomaterials | Prof. Ing Kong (La Trobe University) | | *Joined in July 2019* |
| **Ms. Shalini Kushwaha** | Mechanical Properties and Tribology of $Al_2O_3$-8YSZ-$CeO_2$-CNT based Thermal Barrier Coatings | None | | *Joined in Dec. 2019* |
| **Ms. Pooja Rani** | Biotribology of Ultra High Molecular Weight Polyethylene Based Biocomposites | None | | *Joined in Jul. 2020* |
| **Ms. Shiven P.** | Corrosion and Thermal Properties of $Al_2O_3$-8YSZ-$CeO_2$-CNT based Thermal Barrier Coatings | **None** | | *Joined in Jul. 2020* |
| **Mr. Murli Manohar** | Ceria and Ag Doped Hydroxyapatite and Bioglass composites | **None** | | *Joined Jul. 2020* |
| **Mr. Kunwar P. Singh** | Dual Phase Ultra High Temperature Ceramic Based High Entropy Alloy | **None** | | *Joined Jul. 2020* |
| **Mr. Ravi R. Tiwari** | Joining of Ultra High Temperature Ceramic with Structural Metlas | **none** | | *Joined in Jul. 2023* |

**Masters Students: Completed (32); Ongoing (1)**

| Students | Dissertation Title | Co-Supervisor | Completion | Currently at |
|---|---|---|---|---|
| **Mr. Ankur Gupta** | Compression Molding of Ultra High Molecular Weight Polyethylene (UHMWPE) Reinforced with Hydroxyapatite, Aluminum Oxide and Carbon Nanotubes | **-N.A.-** | **May 2011** | ***(Completed PhD from UCF, FL, USA) Persimmon Technologies Corp. Tech. Development Massachusetts USA*** |
| **Mr. Milind R. Joshi** | Spark Plasma Sintering of Yttria Stabilized Zirconia Reinforces with Hydroxyapatite and Carbon Nanotubes | **-N.A.-** | **May 2011** | ***Tata Motors, Pune*** |
| **Mr. Samir Sharma** | Processing of Ceria Doped Yttria Stabilized Zirconia Electrolyte for Solid Oxide Fuel Cell | **-N.A.-** | **May 2011** | ***Ashok Leyland, Chennai*** |
| **Mr. S. Ariharan** | Role of Particle Size of Yttria Staibilized Zirconia on Plasma Sprayed Alumina Composites | **-N.A.-** | **May 2011** | ***Completed PhD. at IIT Kanpur*** |
| **Mr. S. Ramakrishna** | Effect of Process Variables and Electrostatic Spray Coating on the Mechanical, Electrochemical and Tribological Response of Sintered Stainless Steels | **Prof. Anish Upadhyaya** | **May 2012** | ***Tata Steel R&D, Jamshedpur*** |
| **Mr. Pradyut Sengupta** | Oxidation Studies of SiC-$Al_2O_3$ Coatings on Graphite | **-N.A.-** | **May 2013** | **Pursuing PhD at IIT Kharagpur/ (Earlier at IMMT, Bhubaneswar)** |
| **Mr. Koushik Sikdar** | Fretting of Mg-based LAT971 and LATZ9531 Alloys | **Prof. Shashank Shekhar** | **Jul. 2013** | ***Faculty at National Institute of Foundry & Forge Technology*** |
| **Mr. Amitava Banerjee** | Catalytic Properties of Gadolinia-Doped-Ceria (GDC) - $CeO_2$ Based Composites | **-N.A.-** | **May 2014** | ***Assistant Professor at IIT Jodhpur (Completed Ph.D. at Uppsala University)*** |
| **Mr. Shalabh Srivastava** | Composites of CNF/Graphene and Carbon Aerogel with $MnO_2$ for Supercapacitor Applications | **Prof. Ashutosh Sharma** | **Jul. 2014** | **Completed** |
| **Ms. B. Ishamol** | Ionic conductivity study of ytterbia co-doped scandia stabilized zirconia electrolyte | **Prof. S. Omar** | **Jun. 2015** | ***Saint Gobain, Chennai*** Currently Pursuing PhD at EMTO-ST Institute, University |

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| | | | | of Franche-Comté, France |
| **Mr. Binit Kumar** | Effect of carbon morphologies on friction stir deformation of Al 6061 alloy | **Prof. J. Ramkumar** | **Jul. 2015** | ***Faculty at GL Bajaj ITM, Greater Noida*** |
| **Ms. Rubia Hassan** | Effect of Carbon Nanotube on Toughening of Yttria Stabilized Zirconia | **-N.A.-** | **May 2016** | **Joined PhD at IIT Kanpur** |
| **Mr. Mohit Sanbui** | Structural and Ionic Conductivity Study of Ceria Co-doped Scandia Stabilized Zirconia as an Electrolyte for IT-SOFC | **Prof. Shobit Omar** | **May 2016** | ***Tata Steel, Jamshedpur*** |
| **Mr. Shashwat Singh** | Ageing Effects With Co-doping of $Yb_2O_3$ and $Sc_2O_3$ in $ZrO_2$ electrolyte. | **Prof. Shobit Omar** | **May 2017** | Pursuing PhD at IISc Bangalore |
| **Mr. Anil K. Bisla** | Effect of Magnetic Field on the Cell growth of Multifunctional $Fe_3O_4$-ZnO Reinforced Polymer | | **May 2017** | ***Extria, Gurgaon*** |
| **S. Gowthaman** | Effect of Attenuating Medium on the Tribology of Laser Peened Steel | **Prof. J. Ramkumar** | **May 2017** | Faculty at Bannari Amman Institute of Technology, Erode. |
| **Mr. Arjak Bhattacharjee** | On Functionally porous Bone Scaffolds | **Prof. I. Manna** | **May 2018** | Joined Ph.D. at Washington State University |
| **Ms. Roopal Singh** | Thermal Damage Tolerance of Ultra High Temperature Ceramics for Re-entry Space Vehicles | **-N.A.-** | **May 2018** | BT-MT Student |
| **Mr. Arindam Raj** | Mechanics of Cell Adhesion on Biosubstrates | **-N.A.-** | **May 2018** | BT-MT student, Pursuing PhD at Yale University. |
| **Ms. Pooja Rani** | Polymer Acetabular Cup Liner for Enhanced Tribological Life | **Prof. Anandh Subramaniam** | **Jun. 2019** | Joined as PhD. student at IIT Kanpur since Fall 2020. |
| **Ms. Priya Kushram** | Plasma Sprayed Tribo-coatings | **-N.A.-** | **Jun. 2019** | Offered PhD at Washington State University (after working for 1 year in ExxonMobil Service & Tech. Pvt. Ltd.). |
| **Ms. Shruti Dubey** | Effect of Interfaces on Structural and Thermal Stability of $HfB_2$–$ZrB_2$-SiC-CNT Based Ultra High Temperature Composites | **-N.A.-** | **Feb. 2020** | Joined (Jul. 2016) converted to Ph.D in May 2018. |
| **Ms. Zuveria Firdous** | Electrodeposition of Cu-Ni Coatings | **-N.A.-** | **Jun. 2020** | HSBC Inc. |
| **Mr. Surya Prakash Singh** | Effect of Carbonaceous Reinforcements on Polypropylene based Fire- | **(Prof. J. Ramkumar)** | **Jun. 2020** | **In-kind co-supervision** |

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| | retardation Materials | | | |
| **Mr. Kshitij Khare** | Multi-functional Porous Biological Scaffolds | **(Prof. J. Ramkumar)** | **Jun. 2020** | **In-kind co-supervision** |
| **Mr. Abhishek Kumar** | Ceramic Based Fire-retardation materials | **-N.A.-** | **Jun. 2021** | Offered PhD position in IITB-Monash joint PhD program |
| **Mr. Prathmesh Babrekar** | Effect of Multi-length Scale Porosity on Tribological Properties of Hydroxyapatite-based Composites | **-N.A.-** | **Jul. 2021** | Offered position in Tata Steel |
| **Mr. Jatin Jain** | Tribological Properties of Hydroxyapatite-ZnO Based Biocomposites | **-N.A.-** | **Jul. 2022** | Joined in July 2020 |
| **Mr. Akhil Kotha** | Variable Environmental Effects on Degradation of Hydroxyapatite-Bioglass Biocomposites | **-N.A.-** | **Jun. 2022** | Joined in July 2020 |
| **Ms. Satabhisha Ghosh** | Biodegradable Materials for Coatings on Femoral Stems | **-N.A.-** | **July 2023** | Joined in Oct. 2021 |
| **Mr. Md. Haris** | 3-D printing of Biomaterials as Bone-Scaffold | **-N.A.-** | **May 2023** | Joined in Nov. 2021 |
| **Mr. Sharafat Khan** | Graphene Nanoplatelets and Ceria Reinforced Hydroxyapatite Composites | | **May 2023** | Joined in Dec. 2020 |
| **Mr. Karthikey** | Machine Learning on Oxide Scale Thickness Prediction of Ultra High Temperature Carbides | | | Joined in July 2021 |
| **Mr. Parthadhwaj Konduparty** | High Entropy Alloy Based Devices for Energy Storage Applications | **Prof. Shobit Omar** | | Joined in July 2023 |

**STUDENTS' ACHIEVEMENTS**

1. Dr. Shipra Bahpai received ***Best Ph.D Thesis Award 2023*** from the Department of Materials Science and Engineering during IIT Kanpur's 56$^{th}$ Convocation on July 03, 2023.
2. Mr. Nivedan N. Amarnani Received ***Batra Gold Medal 2023*** for best academic performance in 4-year/5-year programmes of the Materials Science and Engineering Department during IIT Kanpur's 56$^{th}$ Convocation on July 03, 2023.
3. Dr. Rubia Hassan is awarded ***Fulbright-Nehru Doctoral Research Fellowship*** by United States- India Educational Foundation in May 2023.
4. Ms. Chinmayee Nayak received the "***Best Oral Presentation Award***" in the 12th International Conference (Virtual) on Advancements in Polymeric Materials (APM) 2021 organized on virtual platform by Central Institute of Petrochemicals Engineering & Technology (CIPET) Bhubaneswar during Mar. 9-13, 2021.
5. Ms. Rubia Hassan won ***third place*** (Scanning Electron Microscopy category) in the ***Ceramographic Competition*** hosted by the Basic Science Division of the American Ceramic Society, during Materials Science and Technology (MS&T) 2020, Nov. 2-6, 2020.

6. Ms. Zuveria Firdouz received "***Bogineni Chenchu Raman Naidu***" **Gold Medal** for securing best CPI in the M.tech. program of Materials Science and Engineering Department, IIT Kanpur, 2020.
7. Mr. Dhruv Mittal received "***General Proficiency Medal***" for receiving highest CPI in the undergraduate program of Materials Science and Engineering Department, IIT Kanpur, and "***IITK Excellence in Art & Cultural Activities***", during 2020 convocation.
8. Ms. Nishu Jain bagged "***Best All-rounder Girl Student of 2-year Master's Programme Gold Medal***", IIT Kanpur 2020.
9. Ms. Moumita Mistri bagged ***Woman Scientist Award*** for best poster presentation during *Fourth International Conference* on '*Nanotechnology for Better Living*' at Indian Institute of Technology Kanpur, Kanpur, India 6th April 2019.
10. Ms. Pragya Shukla, and Ms. Shikha Awasthi have bagged "***Research Ratna Award***" in *Surface Engineering* section at *Research Under Literal Access* for research work of "Protective trivalent Cr-based electrochemical coatings for gun barrels", at Trichy, Tamilnadu on Feb. 26, 2019. This award includes Achievement Trophy, International Achievement Medal accredited by World Research Council (Branches: Malaysia, USA and India), Award Plaque, Free World Research Council's Membership worth 10,000INR and Award Certificate.
11. Mr. Arjak Bhattacharjee (M. Tech. Student) received ***Dr. Shankar Dayal Sharma Medal*** and ***IITK Excellence in Arts & Cultural Activities*** for his Masters Degree in Jun. 2018.
12. Mr. Arindam Raj (BT-MT student) received ***Proficiency Medal*** for his Masters Degree in Jun. 2018.
13. Dr. Md. Faisal received *Hydrogen Energy and Advanced Materials (HEAM)* ***Young Scientist Award 2018*** along with a cash prize of Rs. 20,000 at University of Kerala by Indian Association of HEAM, funded by ONGC at Trivandrum, India, Mar. 5-6, 2018.
14. Ms. Ambreen Nisar bagged "Silver Award" by ***ASM India - Pradeep Metals PhD Award*** along with a cash prize of Rs. 7,500 for distinguished doctoral research in the area of Materials Science and Engineering at Pune, Oct. 15, 2017.
15. Mr. Shashwat Singh received "***Bogineni Chenchu Raman Naidu***" **Gold Medal** for securing best CPI in the Materials Science and Engineering Department, IIT Kanpur, 2017.
16. Ms. Suboohi Shervani bagged **second prize** in poster presentation, "*Multi-mode Hydrogen Storage in Nanocontainers*". International Conference on Materials Engineering (ICME- 2017), June 2-4, 2017, IIT Kanpur. (in *Structural Materials section*).
17. Dr. Anup Kumar Patel bagged **Certificate of Merit** in poster presentation, "*Tribological and Nanomechanical Analysis of Synergistic Reinforcement of Carbon Nanotube and Aluminum Oxide in Ultrahigh Molecular Weight Polyethylene*", International Conference on Materials Engineering (ICME- 2017), June 2-4, 2017, IIT Kanpur.
18. Ms. Aditi Pandey bagged **third prize** in poster presentation, "*Acquired Antioxidant and Antibacterial Activity by Hydroxyapatite-based Biocomposites*", International Conference on Materials Engineering (ICME- 2017), June 2-4, 2017, IIT Kanpur. (in *Functional Materials section*).
19. Dr. Alka Gupta". International Conference on Materials Engineering (ICME- 2017), June 2-4, 2017, IIT Kanpur. Received acknowledgement in *Functional Materials section*.
20. Ms. Ambreen Nisar bagged "**IBM Best Ph.D Thesis Award 2017**" with cash award of Rs. 25,000 for her innovation, talent and outstanding work done in India in the area of Computer Science and allied field.

21. Rita Maurya and Abdul Siddiqui, bagged **second prize** for oral presentation, "*An Environmental Friendly Phosphate Chemical Conversion Coating on Novel Mg-9Li-7Al-1Sn and Mg-9Li-5Al-3Sn1Zn Alloys for Corrosion Protection*", (in Materials for Strategic Applications category) during 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
22. Ms. Rubia Hassan received "***Bogineni Chenchu Raman Naidu***" **Gold Medal** for securing best CPI in the Materials Science and Engineering Department, IIT Kanpur, 2016.
23. Ms. Rubia Hassan received "***Cadence Gold Medal***" for securing best overall performance in the M. Tech. thesis among all the disciplines, IIT Kanpur, 2016.
24. Ms. Shikha Pandey was awarded "***Bharat Jyoti Award***" from Indian Friendship Society on Jun. 09, 2016. Earlier, this award is also given to Mother Teresa and Sunil Gavaskar.
25. Mr. Amitava Banerjee was awarded prestigious "***IIM Dr. AK Bose Gold Medal***" for his M.Tech. thesis during Indian Institute of Metals' Annual Technical Meeting on Nov. 14, 2014 at College of Engineering, Pune.
26. Mr. Amitava Banerjee received "***Bogineni Chenchu Raman Naidu***" **Gold Medal** for securing best CPI in the Materials Science and Engineering Department, IIT Kanpur, 2014.
27. Mr. Mohammad Faisal is selected as President's Council of Student Advisors (PCSA) delegate for year 2014-15 by The American Ceramic Society.
28. Mr. Prashant Kumar was awarded ***Best Oral Presentation Award*** for "*Pulsed Electrodeposition of Nano-Crystalline Ni with Uniform Co-Depostion of Micron Sized Diamond Particles on Annealed Copper Substrate*" BTTD (Behind the Teachers Desk) Seminar held at National Metallurgy Laboratory Jamshedpur on 27-28 March 2014.
29. Suboohi Shervani, Mohammad Faisal, Anshul Gupta, Kantesh Balani and Anandh Subramaniam, "*Hydrogen Storage in Mg-$Mg_2$Ni hybrids by accumulative roll bonding*" was awarded ***First Prize*** in the Structural Materials Category at the International Conference on Emerging Materials and Processes held at Institute of Minerals and Materials Technology (IMMT), Bhubaneswar from 26th to 28th Feb, 2014.
30. Dr. Prafulla Kumar Mallik, is serving as ***Assistant Professor***, Indira Gandhi Institute of Technology, Orissa.
31. Mr. Pradyut Sengupta was awarded prestigious "***IIM Dr. AK Bose Gold Medal***" for his M.Tech. thesis during Indian Institute of Metals' Annual Technical Meeting on Nov. 14, 2013 at IIT BHU, Varanasi.
32. Mr. Pradyut Sengupta received "***Bogineni Chenchu Raman Naidu***" **Gold Medal** for securing best CPI in the Materials Science and Engineering Department, IIT Kanpur, 2013.
33. Mr. Kandala Ramakrishna received "***Dr. Baldeva Upadhyaya Gold Medal***" for best M. Tech. thesis in the Department of Materials Science and Engineering, in 2012.
34. Mr. Raja Choudhary received "***Best B. Tech. Project Award***" in the Department of Materials Science and Engineering, IIT Kanpur, in 2013.
35. Mr. Anup Kumar Patel received "***Best Paper Award***" for his poster on "***Wettability and Cytocompatibility Study of Functionalized Carbon Nanotube and $Al_2O_3$ Reinforced Ultra High Molecular Weight Polyethylene Biocomposite***" (with Rs.5000/- cash award) during ISRS (*International Symposium for Research Scholars*) 2012 conference held at IIT Madras during Dec. 13-15, 2012.
36. Ambreen Nisar, *Rajeev Kumar Sharma*, Kantesh Balani, received ***First Prize*** for her poster on, "***Mechanical Properties of Spark Plasma Sintered ZnO Reinforced Hydroxyapatite***". Author received cash award of Rs. 1500/- (Rupees one thousand five hundred only) in *AFMS (Advanced Functional Materials and Structures)* workshop held in Allahabad during July 12-14, 2012.
37. *Dr. Vinod Kumar* is serving as ***Assistant Professor*** of *Malaviya National Institute of Technology, Jaipur*, India (Jan. 2012).

38. *Dr. Ashutosh K. Dubey*, Ph.D. student received ***Young Scientist Award*** 2011 in Materials Science division by ***Indian Science Congress Association.*** Currently a JSPS (***Japan Society for Promotion of Science***) post-doctoral research scholar at Nagoya Institute of Technology, Japan.
39. *Mr. Atif Faiz* received "***Best B. Tech. Project Award***" in the Department of Materials Science and Engineering, IIT Kanpur, in 2011.
40. *Milind Raghuveer Joshi*, *Ariharan S.*, Kantesh Balani, Received ***First Prize*** in the *Functional Materials Section*, "***Fracture Toughness of 8 mol% Yttria Stabilized Zirconia Reinforced with Hydroxyapatite***". *Indian Institute of Metals, Annual Technical Meeting*, Bangalore, India, Nov. 15-16 2010.

## *ORGANIZER OF CONFERENCES/ WORKSHOP*

1. Co-organizer (with Prof. Gouthama) of **Quality Improvement Program (QIP) workshop** on, "***Mastering Advanced Techniques of Characterization for High-end Research (MATCH® - 2021)***" at IIT Kanpur, Jan. 25-31, 2021.
2. Co-organised (with Prof. Bushra Ateeq) conference on '***Women in Sciences and Engineering***' on Oct. 19-20, 2019 at IIT Kanpur with over 60 participants.
3. Conducted a workshop on "***Nanomechanics and Biotribology 2019***" on Oct. 15-16, that included 9 lectures and 8 lab sessions and witnessed participation of 31 research scholars and teachers across the country.
4. Organised a "***Virtual Lab Workshop***" on Sept. 14, 2019 at IIT Kanpur with participation of over 180 delegates from in and around Kanpur.
5. Organised workshop on "***Virtual Labs***" (with Prof. K. V. Gangadharan, NITK Suratkal) at IIT Jammu on May 29, 2019. (~50 participants from 10 institutes attended the workshop).
6. Organized half-day Virtual lab workshop on "***Materials Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli Laboratories"*** at NIT Srinagar on May 28, 2019. (~35 participants attended the workshop).
7. Organized half-day Virtual lab workshop on "***Materials Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli Laboratories"*** at MANIT Bhopal on Apr. 06, 2019. (~145+ participants attended the workshop).
8. Organized half-day Virtual lab workshop on "***Materials Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli Laboratories"*** at CIPET Bhopal on Apr. 06, 2019 (~110+ participants attended the workshop).
9. Organized half-day Virtual lab workshop on "***Materials Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli Laboratories"*** at Vishveshwarya Group of Institution, Ghaziabad (Greater Noida-Phase II), on Mar. 09, 2019 (~120 students and 15 faculty members attended the workshop).
10. Conducted a half-day Virtual lab workshop on "***Materials Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli Laboratories"*** at Shambhunath Institute of Engineering & Technology Prayagraj, on Mar. 02, 2019 (>130 participants).
11. Profs. Deepu Philip, Pankaj Jian, Nishchal Verma and Kantesh Balani organized a ***Virtual Lab workshop*** at Allenhouse Institute of Technology, Kanpur, on Feb. 16, 2019 wherein 120 students and 9 faculty members attended the workshop.
12. Profs. Deepu Philip, S. Banerjee and Kantesh Balani organized a ***Virtual Lab workshop*** at Christ Church College, Kanpur, on Oct. 06, 2018, wherein over 140 participants attended the workshop.
13. Conducted half-day Virtual lab workshop on "***Materials Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli Laboratories"*** at REC Banda on Aug. 18, 2018 (~37 students and 11 faculty members attended the workshop).

14. Organized one-day workshop on "***Virtual Laboratories"*** on Sept. 15, 2018 at IIT Kanpur, India (over 130 participants). Jointly organized by Indian National Academy of Engineering (INAE) Kanpur Chapter and IIT Kanpur under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (*NMEICT*).
15. Co-organizer (with Prof. Gouthama) of **Quality Improvement Program (QIP) workshop** on, "***Mastering Advanced Techniques of Characterization for High-end Research (MATCH® - 2018)***" at IIT Kanpur, Aug. 27-31, 2018.
16. Organized half-day Virtual lab workshop on "***Materials Response to Microstructural-, Mechanical-, Thermal- and Biological Stimuli Laboratories"*** at REC Kannauj on Aug. 11, 2018 (~188 students and 32 faculty members attended the workshop).
17. Prof. Deepu Philip and Prof. Kantesh Balani conducted a Half Day ***Virtual Lab workshop*** at PSIT, Kanpur on Jul. 14, 2018 (17 students and 40 faculty members attended the workshop).
18. Indian Chair of *Indo-German Frontiers of Engineering (INDOGFOE) 2018* of ***Department of Science and Technology***, ***Alexander von Humboldt Foundation*** and ***Indian Institute of Technology Kanpur***, at Potsdam, Germany, May 24-27, 2018.
19. Organized one-day workshop on "***Virtual Laboratories"*** on Sept. 16, 2017 at IIT Kanpur, India (over 110 participants). Jointly organized by Indian National Academy of Engineering (INAE) Kanpur Chapter and IIT Kanpur under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (*NMEICT*).
20. Core-committee member for organizing Technical Sessions in "***International Conference on Materials Engineering (ICME) 2017***" during Jun. 03-05, 2017 at IIT Kanpur.
21. Indian Chair of *Indo-German Frontiers of Engineering (INDOGFOE) 2017* of ***Department of Science and Technology***, ***Alexander von Humboldt Foundation*** and ***Indian Institute of Technology Kanpur***, at Jaipur, Rajasthan, India, Mar. 09-12, 2017.
22. Co-organizer of "*National Frontiers of Engineering Conference*" of ***Indian National Academy of Engineering***, Jun. 23-25, 2016.
23. Co-organizer, "*Annual Technical Meeting 2016*" of ***Indian Institute of Metals*** at IIT Kanpur during Nov. 11-13, 2016.
24. Indian-session organizer of session on "*Exploring Length Scales in Biomechanics*" during ***Indo-German Frontiers of Engineering*** at Potsdam, Germany, May 19-22, 2016.
25. Organized 1.5 day workshop on "***Instrumented Indentation***" at Advanced Center for Materials Science, IIT Kanpur on Jan. 30-31, 2016.
26. Organized half-day workshop on ***Virtual Laboratories*** at *Puranchandra Vidya Niketan*, Kanpur, on Oct. 31, 2015 (>65 participants).
27. Organized one half-day workshop on ***Virtual Laboratories*** at *Global Group of Institutions*, Lucknow, on Apr. 29, 2015 (~100 participants).
28. Organized one half-day workshop on Virtual Laboratories at Ambedkar Institute of Technology for Handicapped (AITH), Kanpur, on Apr. 22, 2015 (~50 participants).
29. Organized one-day workshop on "***Virtual Laboratories"*** under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (*NMEICT*) on Mar. 15, 2015 at IIT Kanpur, India (over 150 participants).
30. Lead organizer for symposium on "***Nanomechanics of Biomaterials***" during *Materials Science & Technology 2014 Conference and Exhibition* (MS&T'14) October 12-16, *2014*, Pittsburgh, Pennsylvania, USA.
31. Co-organizer of Quality Improvement Program (QIP) Course on "***Advanced Engineering Materials for Structural Applications***" organized during Aug. 17-22, 2014, IIT Kanpur.

32. Co-organizer of Workshop on "***Advanced Materials Processing and Characterization***" organized during Aug. 17-22, 2014, IIT Kanpur.
33. Lead Organizer for one-day workshop on "***Virtual Laboratories"*** under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (*NMEICT*) on Dec. 07, 2012 at IIT Kanpur, India (~60 participants).
34. Organized half-day workshop on "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli"*** for undergraduate students on Nov. 03, 2012 at IIT Roorkee, India (over 15 participants).
35. Organized one-day workshop on "***Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli"*** for students on Oct. 13, 2012 at IIT Kanpur, India, under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (~40 participants).
36. Organized one-day workshop on "***Virtual Laboratories"*** under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (*NMEICT*) on Feb. 4, 2012 at IIT Kanpur, India (over 160 participants).
37. Lead organizer of a symposium on "***Emerging Frontiers in Surface Engineering of Biomaterials***" during *Materials Science & Technology 2011*, held during Oct. 16-20$^{th}$ 2011 at Columbus OH, USA. Co-organizers Profs. A. Agarwal (FIU), S. Harimkar (OSU), and W. O. Soboyejo (Princeton).
38. Main organizer of workshop on "***Nano-Biomaterial CHAMPS (Characterization, Hierarchy, Advanced Material Processing and Surfaces)"* held** during Apr. 25-29$^{th}$ 2011 at IIT Kanpur, India. Co-organizers: *Prof. Roger Narayan* **(**UNC/NCSU Joint Department of Biomedical Engineering), and *Prof. Bikramjit Basu* (Lab. Of Biomaterials, IIT Kanpur).
39. Organized "***Materials Conclave***" on Dec. 19-21$^{st}$ 2010 at IIT Kanpur, India.
40. Main organizer of "***Hydrogen and Energy Storage***" International Symposium on Jan. 14$^{th}$ 2010 at IIT Kanpur, India.
41. Principal organizer of Short Term Course on "***Processing Characterization and Properties of Advanced Engineering Materials***", Feb. 24-28$^{th}$ 2010, at IIT Kanpur, India.
42. Lead organizer of Workshop on "***Recent Trends in Surface Engineering***" from Feb. 25-28$^{th}$ 2010 at IIT Kanpur, India.

## PEER-REVIEW ACTIVITIES

Editor-in-Chief

***Nanomaterials and Energy*** (ICE Publishing), Jun. 2017- till date.

Associate Editor

***Journal of Thermal Spray Technology (Springer),*** Jan. 2022- till date.

Editorial Board

***Journal of Materials Research*** (*Principal Editor*, starting Jan. 2020 – till date).

***Journal of Thermal Spray Technology*** (Associate Guest Editor, May 2016, May 2017, May 2018, May 2019, & May 2020 issues)

***Coatings (Guest Editor***, Special Issue: Ultrahigh Temperature Ceramic Coatings, May 2017)

***Defense Science Journal*** (Editorial Board: GoI, DRDO, Two years: 2015-16 & Dec. 2020 onwards).

***Nanomaterials and Energy*** (Associate Editor, ICE Publishing), Mar. 2011-May 2017.

***Recent Patents on Materials Science*** (Bentham), 2010-2015.

***Recent Patents on Nanotechnology*** (Bentham), 2010-2015.
***Journal of Materials & Metallurgical Engineering*** (STM Journals), 2011-2019.
***Journal of NanoScience, NanoEngineering & Applications*** (STM Journals), 2011-2019
***Journal of Engineering*** (Hindawi), Jul. 2012-Mar. 2019.
***Indian Journal of Materials Science*** (Hindawi), Apr. 2013-Mar. 2019.

Key Reader
Metallurgical and Materials Transactions A (Springer) – Jan 2010 onwards

Journals (Reviewer):

- Certificate of **Outstanding Contribution** in Reviewing:
    - ***Top Peer Reviewer 2019 (Publons) – Top 1% in cross-field***
    - ***Top 1% Peer Reviewers (Materials Science)- Publons: 2017 & 2019***
    - ***Acta Biomaterialia***, May 2014 & Dec. 2017
    - ***Additive Manufacturing***, Aug. 2018
    - ***Applied Surface Science***, May 2009, Feb. 2014
    - ***Carbohydrate Polymers***, Nov. 2018
    - ***Carbon***, Mar. 2018
    - ***Ceramics International***, Jul. 2017
    - ***Composites Part B***, Apr. 2017
    - ***Corrosion Science***, Jul. 2018
    - ***International Journal of Hydrogen Energy***, Sep. 2018
    - ***Journal of Alloys and Compounds***, Oct. 2018
    - ***Journal of Mechanical Behavior of Biomedical Materials***, May 2017
    - ***Journal of Thermal Spray Technology***, Apr. 2017
    - ***Materials Science and Engineering C, Apr. 2018***
    - ***Surface & Coatings Technology***, Dec. 2017
    - ***Vacuum***, Dec. 2016

***ACS Publications*** (Applied Materials and Interfaces)
***ASM*** (Journal of Materials Engineering and Performance)
***Bentham Science*** (Recent Patents on Materials Science)
***Blackwell Publishing Inc.*** (International Journal of Applied Ceramic Technology, and Journal of American Ceramic Society)
***Cambridge Core*** (Journal of Materials Research)
***Elsevier*** (Acta Biomaterialia, Applied Surface Science, Carbon, Ceramics International, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Composites Part A, Composites Part B, Computational Materials Science, Electrochemistry Communications, European Journal of Mechanics – B, Journal of Alloys and Compounds, Journal of European Ceramics Society, Journal of Materials Science and Technology, Journal of the Mechanical Behavior of Biomedical Materials, Journal of Physics and Chemistry of Solids, Materials Characterization, Materials Chemistry and Physics, Materials and Design, Materials Letters, Materials Research Bulletin, Materials Science and Engineering A, Materials Science and Engineering C, Nuclear Engineering and Design, Powder Technology, Surface and Coatings Technology, Thin Solid Films, Vacuum)
***Highwire*** (Journal of Medical Microbiology)
***Hindawi*** (Advances in Tribology, Journal of Engineering)
***Indian Academy of Science*** (Sadhana - Academy Proceedings in Engineering Science)
***Institution of Civil Engineers*** (Nanomaterials and Energy)

***Materials Research Society of India and the Indian National Science Academy*** (Bulletin of Materials Science)

***National Journals*** (Current Science, DRDO Defense Journal, Indian Journal of Engineering and Materials Sciences)

***Nature Publishing Group*** (Scientific Reports)

***NISCAIR*** (Indian Journal of Engineering and Material Sciences)

***PLOSONE*** (PLOS ONE)

***Royal Society of Chemistry*** (Journal of Materials Chemistry B, RSC Advances)

***SAGE Journals*** (Journal of Biomaterials Applications, Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science)

***Serials Publications Pvt. Ltd.*** (International Journal of Nano Science, Nano Engineering and Nanotechnology)

***Springer*** (Biointerphases, Ionics, Journal of Advanced Ceramics, Journal of Materials Science: Materials in Medicine, JOM Journal of Metals, Metallurgical and Materials Transactions A, Minerals and Materials, Journal of Thermal Spray Technology, Transactions of the Indian Institute of Metals)

***STM Publications*** (Journal of Materials & Metallurgical Engineering, Journal of NanoScience NanoEngineering & Applications, Journal of Polymer & Composites)

***Taylor and Francis*** (Materials Technology: Advanced Performance Materials)

***Wiley*** (Advanced Biomaterials, ChemSusChem, Journal American Ceramics Society, Journal of Biomedical Materials Research: Part B – Applied Biomaterials, Polymer Composites)

Book (Reviewer): Materials and Manufacturing Processes, Materials and Manufacturing Processes - Efim Oks and Ian Brown; Kluwer Academic Publishers (Marcel and Dekker).