

CURRICULAM VITAE

Name : **Professor S. P. Rath**
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Present Position : *Professor (HAG) & Lalit Mohan Kapoor Chair*

Education:

- *NIH Post-doctoral Research Associate* (Supervisor: Prof. Alan L. Balch)
University of California, Davis, USA. (2000-2004)
- Ph. D.: Department of Inorganic Chemistry, Indian Association for the Cultivation of Science, Jadavpur (1999) (Supervisor: Prof. Animesh Chakravorty)
- M.Sc.: Calcutta University (Inorganic Chemistry) (1994)
- B.Sc. (*Hons.* in Chemistry): Calcutta University (1992) (College: Ramakrishna Mission Vidyamandira, Belur Math)

Work Experience:

- *Lalit Mohan Kapoor Chair Professor*, Department of Chemistry
Indian Institute of Technology Kanpur, 2022- 2025
- *Professor (HAG)*, Department of Chemistry,
Indian Institute of Technology Kanpur, 2021-
- *J. N. Gupta & M. Gupta Chair Professor*, Department of Chemistry,
Indian Institute of Technology Kanpur, 2017- 2020
- *Professor*, Department of Chemistry,
Indian Institute of Technology Kanpur, 2014-20
- *Visiting Professor*, Anorganisch-Chemisches Institut, Heidelberg University, Germany
May 2015-to-July 2015
- *AvH Fellow (Experienced Researcher)*
Anorganisch-Chemisches Institut, Heidelberg University, Germany
Dec. 2012-to-July, 2013

- *Associate Professor*, Department of Chemistry
Indian Institute of Technology Kanpur, 2009- 2013
- *Assistant Professor*, Department of Chemistry
Indian Institute of Technology Kanpur, Dec. 2004-April 2009
- *NIH Post-doctoral Research Associate*
Department of Chemistry, University of California, Davis, USA.
2001-2004

Awards and/or other recognitions received:

- (a) '**Excellence-in-Teaching**' Award, IIT Kanpur, 2021.
- (b) *Lalit Mohan Kapoor Chair Professor*, IIT Kanpur (2022-2025)
- (c) **HAG** Professor, IIT Kanpur, 2021-
- (d) SERB - Science and Technology Award for Research (**SERB-STAR**), 2020.
- (e) Visiting Professor, IIT Bombay (2021-2023)
- (f) Visiting Professor, Heidelberg University, Germany (2015)
- (g) Fellow, Royal Society of Chemistry (FRSC), 2021
- (h) Elected Fellow, Indian Academy of Sciences, Bangalore, 2020
- (i) J. N. Gupta & M. Gupta Chair Professor, IIT Kanpur (2017-2020)
- (j) JSPS Invitational Fellowship, Kyushu University, Japan, 2020
- (k) Professor R S Varma Memorial Award by Indian Chemical Society, 2020
- (l) C. N. R. Rao National Prize in Chemical Sciences, 2018
- (m) Elected Fellow, National Academy of Sciences, 2017
- (n) Bronze Medal from Chemical Research Society of India (CRSI)- 2015
- (o) Elected Fellow, West Bengal Academy of Science & Technology, 2017
- (p) Institute Foundation Day Lecture, NIT Patna on January 27, 2017
- (q) Member, Editorial Board, Chirality, 2019-
- (r) Alexander von Humboldt Research Fellowship for Experienced Researcher in 2012
- (s) P. K. Kelkar Faculty Research Fellowship from IIT Kanpur (2009-2012)
- (t) Senate Member, NPTEL (the National Programme on Technology Enhanced Learning, MHRD), 2019-
- (u) Member, National Organizing Committee (NOC), Modern Trends in Inorganic Chemistry (MTIC)
- (v) Member, Screening Committee, SERB-SUPRA (Scientific and Useful Profound Research Advancement), 2021
- (w) PAC Member, Young Scientist Expert Committee-Chemical Sciences, Science & Engineering Research Board (SERB, DST), 2015-2018

- (x) Member, International Advisory Committee of the first Asian Conference on Porphyrins, Phthalocyanines and Related Materials (ACPP-1), Beijing, China, 2019
- (y) Member, Academic Review Committee of IIT Kanpur (UGARC, 2018-21)
- (z) Member, Organizing Committee for Natural and artificial metalloenzymes: Faraday Discussion, IIT Kanpur, Royal Society of Chemistry, 2022
- (aa) Member, Screening Committee, SERB-SUPRA (Scientific and Useful Profound Research Advancement), 2021

Membership in Professional Society:

- Life member, Chemical Research Society of India (CRSI)
- Member, Royal Society of Chemistry (RSC)
- Member, Society of Biological Inorganic Chemistry (SBIC)
- Member, American Chemical Society (ACS)
- Member, Society of Porphyrins and Phthalocyanines (SPP)
- Life member, Indian Association for the Cultivation of Science (IACS)

Research Areas of Interest:

In the fields of Physical–Inorganic and Bioinorganic Chemistry with special emphasis on the structure-function correlation utilizing a wide variety of spectroscopic methods combined with DFT calculations. Current research interests are:

- Bio-inorganic Chemistry
- Chemical Biology
- Multiheme Proteins and Enzymes
- Medicinal Inorganic Chemistry
- Supramolecular Chirogenesis
- NMR Spectroscopy of Paramagnetic Molecules

Thesis Supervision as PI only at IIT Kanpur (no Co-PI involved):

- PhD already awarded: **20**
- Post-doctoral Research Associate: **20**
- Master's thesis supervision: **37**
- Summer project students: **~50** including academy and INSPIRE students
- PhD students working at present: **12**

Courses Taught:

Has taught a variety of under-graduate (UG) and post-graduate (PG) core/elective courses at the Department of Chemistry, IIT Kanpur.

- CHM 101N Introductory Chemistry Lab (UG)
- CHM 201N General Chemistry (UG)
- CHM201R General Chemistry (UG)
- CHM341 Basic Inorganic Chemistry (UG)
- CHM442/CHM342A Inorganic Chemistry-2 (UG)
- CHM443/CHM343A Inorganic Chemistry Lab (UG)
- CHM 646 Bio-inorganic Chemistry (UG & PG)
- CHM 651 Crystal and Molecular Structure Determination (UG & PG)
- CHM631 Applications of Modern Instrumental Methods (UG & PG)
- CHM 649 Principles of Inorganic Chemistry (PG)
- CHM 691 Frontiers in Inorganic Chemistry (UG & PG)
- CSO 203A Inorganic Molecules, Materials & Medicine (UG)

Received Commendations multiple times from the **Director**, IIT Kanpur for excellence in teaching as “**Outstanding Instructor**”. **Commendations Letters (obtained >3.5 out of 4.0) received ONLY recently (since 2010) for the following Course Numbers:**

- CHM646A 2022-23-I
- CHM101N 2021-22-II
- CSO203A 2021-22-II
- CHM631A 2021-22-I
- CHM646A 2020-21-II
- CHM691A 2020-21-I
- CHM646A 2019-20-I
- CSO203A 2018-19-II
- CHM646A 2017-18-II
- CHM646A 2016-17-I
- CHM443A 2015-16-II
- CHM646A 2015-16-I
- CHM646A 2013-14-II
- CHM646A 2010-11-I

- **New Course Designed for UG Students:**

CSO-203A: Inorganic Molecules, Materials & Medicine

- **NPTEL** (the National Programme on Technology Enhanced Learning, MHRD) course on **Bioinorganic Chemistry** (August 2019). This is also an AICTE approved FDP course. **The course was re-offered again in 2021, 2022 and 2023 so far.**
- Coordinator of Global Initiative of Academic Networks (**GIAN**) course “Crystal Structure Determination: Principle and Application” conducted at IIT-K during Nov 29 to Dec 9, 2017

Funding from External Agencies:

List of R&D projects as **PI ONLY**:

| Period | Sponsoring Organization | Title of Project |
|----------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2022-25 | SERB | Probing Bis-FeIV MauG: Reactivity, Spin Coupling and Isolation of Highly Reactive Intermediates |
| 2021-24 | CSIR | Induction, Control, and Rationalization of Supramolecular Chirogenesis in Metalloporphyrin Trimer using Exciton Coupled Circular Dichroism |
| 2020-23 | Indian-Israeli Joint Research Cooperation, DST | Mono- and Bimetallic Complexes for Energy-Relevant Photocatalysis |
| 2020-23 | SERB-STAR | Understanding Nature's Design towards Developing Novel Therapeutic Metallo drug for Sulfite Oxidase Deficiency |
| 2018- 21 | SERB | Modeling Diheme Enzyme MauG: Understanding Nature's Design, Structure-Function Correlation and Application |
| 2017- 20 | CSIR | Probing Molecular Chirality by dimeric metalloporphyrin hosts: Transfer, Control and Rationalization using Exciton Coupled Circular Dichroism |
| 2017-19 | MHRD | Crystal Structure Determination: Principle and Application |
| 2017- 19 | SERB | Probing Bis-Fe (Iv) MauG Analog: Structure - Function Correlation and Catalytic Application |
| 2017-19 | SERB | Functional Model of the Cytochrome-c-oxidase Active Sites: Effects of Metal Ions, Ligand Environment and Mechanistic Investigation |
| 2014-17 | SERB | Porphyrin Dimers as Model of Di-heme Proteins: Inorganic and Bioinorganic Perspectives and Consequences of Heme-Heme Interactions |
| 2013-16 | CSIR | Supramolecular Chirogenesis in the Bisporphyrin-Based systems upon Interactions with Bidentate Ligands: Origin, Control, and Application |
| 2009-12 | DST | Models for the Photosynthetic Reaction Center: Synthesis, Structure, Reactivity and Photophysical Properties of Porphyrin Dimers and Rationalization of Supramolecular Chirality |
| 2009-13 | CSIR | Nonplanar Metallo-porphyrins and Implications for the Hemoproteins |
| 2009-11 | CARE | Establishment of a CD-Spectrometer Facility |
| 2008-11 | REACH | Fabrication of solar cells with biomimetic design of chlorophyll pairs present in green leaves |
| 2006-09 | DST | Synthesis, Solid and Solution Phase Structure and Reactivity of New Model Intermediates in the Heme-Degradation Process Catalyzed by Heme-Oxygenase |
| 2006-09 | CSIR | Synthesis, Structure and Reactivity of Vanadium-Oxophlorins and Related Species: Implications for Heme Protein Intermediates |

Invited Lectures Delivered (Selected Only) since 2010:

- Department of Chemistry, Hebrew University (Israel) on Jan 04, 2023
- Department of Chemistry, Technion-Israel Institute of Technology (Israel) on Jan 02, 2023
- Department of Chemistry, Tel Aviv University (Israel) on Jan 01, 2023
- 2nd Asian Conference on Molecular Magnetism (ACMM II) held at IISER Bhopal during Dec 6-10, 2022.
- 3rd International Conference on “Modern Trends in Molecular Magnetism (MTMM) held at IIT Kharagpur during Dec 11-14, 2022.
- Department of Chemistry, IIT Bombay on Oct 28, 2022
- School of Materials Science and Engineering, Nankai University (China) (on-line lecture) on Aug 26, 2022
- ACS National Meeting held in Chicago, USA during Aug 21-Aug 25, 2022.
- 12th International Conference on Porphyrins and Phthalocyanines (ICPP-12) held on Madrid, Spain during July 10-July 16, 2022.
- Institute of Materials Chemistry and Engineering, Kyushu University (Japan) on July 06, 2022
- Department of Chemistry, Tohoku University (Japan) on July 01, 2022
- Department of Chemistry, Tsukuba University (Japan) on June 29, 2022
- Department of Chemistry, NIMS (Japan) on June 28, 2022
- Department of Chemistry, Tokyo University (Japan) on June 27, 2022
- Department of Chemistry, Kanazawa University (Japan) on June 24, 2022
- Department of Chemistry, Nagoya University (Japan) on June 22, 2022
- Department of Chemistry, Tokyo Metropolitan University (Japan) on June 10, 2022
- Department of Chemistry, Ritsumeikan University (Japan) on June 07, 2022
- Department of Chemistry, Kyoto University (Japan) on June 06, 2022
- Department of Chemistry, Osaka University (Japan) on June 02, 2022
- Department of Chemistry, Hiroshima University (Japan) on June 01, 2022
- Department of Chemistry, Kumamoto University (Japan) on May 26, 2022
- Department of Chemistry, Nagasaki University (Japan) on May 23, 2022
- Department of Chemistry, Faculty of Engineering, Kyushu University (Japan) on May 18, 2022
- **Keynote speaker** in the National Conference on “Novel Trends in Chemistry” Govt. Digvijay Autonomous PG College on October 20, 2021
- Faculty Development Programme (under DBT Star College Scheme) held on the St. Xavier’s college (Autonomous), Kolkata on September 30, 2021.
- Refresher Course in Chemistry for University and College Teachers in the UGC-Human Resource Development Centre, GGV, Bilaspur from 23rd Aug to 4th Sept 2021.

- 11th International Conference on Porphyrins and Phthalocyanines (ICPP-11) held on New York, USA during June 26-July 2, 2021.
- Workshop on Recent Advances in Spectroscopy, Catalysis and Synthesis at the Department of Chemistry, IIT Kanpur during June 14 – July 02, 2021
- Refresher Course in Chemistry for University and College Teachers in the UGC-Human Resource Development Centre, Kumaun University from 15th to 28th Feb 2021.
- **Professor R S Varma Memorial Award Lecture** at the International Conference on Recent Trends in Chemical Sciences (RTCS-2020) organized by Indian Chemical Society during Dec 26-29, 2020
- National Conference on “Recent Trends in Chemical Sciences” held at National Institute of Technology, Manipur during 12th-16th October, 2020
- Faculty Development Programme on "Recent Advances in Molecular Chemistry and Functional Materials" held at Amity University, Delhi during 17th- 21st August 2020
- International Webinar on “Chemistry and Biology: Sustainable Progress of Human Civilization” organized by Indian Chemical Society held on June 29-30, 2020
- International Conference on ‘Catalysis and Synthesis 2020’ (CS-2020) during March 13-14, 2020 at the Department of Chemical Sciences, IISER Kolkata
- **Keynote speaker** in the Dr. APJ Abdul Kalam Technical University in the Faculty Development Program on 15th January, 2020.
- **Plenary Lecture** at the “International Conference on Chemistry for Human Development (ICCHD-2020)” held during January 9-11, 2020 in Kolkata.
- **INSPIRE** (Innovation in Science Pursuit for Inspired Research) Science Camp held on S.R.M.S.C.E.T., Lucknow on Nov 30, 2019.
- International Conference on “Recent Advances in Fundamental and Applied Sciences” held at LPU, Phagwara, Punjab during Nov 5-6, 2019.
- Department of Chemistry, IEST, Shibpur on Nov 1, 2019.
- **INSPIRE** (Innovation in Science Pursuit for Inspired Research) Science Camp held on S.R.M.S.C.E.T., Unnao on September 1, 2019.
- International Conference on “Emerging Trends in Chemistry” held at IIT Indore during July 12-15, 2019.
- Department of Chemistry, IIT-Bombay on June 28, 2019.
- Department of Chemistry, IIT-Gandhinagar on April 23, 2019.
- School of Chemistry, University of Hyderabad on April 8, 2019.
- National Conference on “Chemical Sciences: Advancing Frontiers” at University of Lucknow, held during March 15-16, 2019.
- **INSPIRE** (Innovation in Science Pursuit for Inspired Research) Science Camp held on S.R.M.S.C.E.T. Unnao on March 1, 2019.
- 1st International Conference on Advanced Chemical and Structural Biology (ICACSB-2019) held at PRIST, Chennai during 19-21st February 2019.
- Department of Chemistry, IIT-Madras on February 19, 2019.

- **C. N. R. Rao National Prize for Chemical Science Lecture** at 24th CRSI National Symposium in Chemistry (NSC-24) held at CSIR-CLRI, Madras during 8th-10th February, 2019.
- National Conference on “Recent Developments in Chemistry” RDC-2018 at the Department of Chemistry, NIT-Durgapur on December 17-19, 2018.
- Symposium on “New Frontiers in Chemical Science (NFCS)” held at Indian Institute of Technology Bombay, Mumbai during 13th-14th December, 2018.
- **INSPIRE** (Innovation in Science Pursuit for Inspired Research) Science Camp held on S.R.M.S.C.E.T. Unnao on November 21, 2018.
- Symposium on “*National Symposium on Emerging Trends in Chemical Sciences (NSETCS-2018)*” held on Institute of Science, Banaras Hindu University, Varanasi during November, 17-18, 2018.
- 1st International Symposium on “Main-group Molecules to Materials” (MMM-2018) held in the Department of Inorganic and Physical Chemistry (IPC), Indian Institute of Science, Bangalore during October 28th-31st October 2018
- UK-India Symposium on Advances in Inorganic Chemistry held on the University of Manchester, UK, on 26th September 2018, jointly organised by the Royal Society of Chemistry and the Chemical Research Society of India
- 43rd International Conference on Coordination Chemistry (ICCC 2018) held on Sendai, Japan during July 30-August 4, 2018 (and also have **Chaired** a session).
- Refresher Course in Chemistry (Theme: Chemistry with Industrial and Pharma link) held at the UGC-Human Resource Development Centre, Kumaun University, Nainital, during July 23-24, 2018.
- Institute of Inorganic Chemistry, Humboldt-University Berlin, Berlin, Germany on July 12, 2018.
- Institut für Anorganische und Analytische Chemie, Technische Universität, Braunschweig, Germany on July 10, 2018.
- Institut für Anorganische Chemie, University of Jena, Germany on July 9, 2018.
- 10th International Conference on Porphyrins and Phthalocyanines (ICPP-2018) held on Munich, Germany during July 01- July 6, 2018 (and also have **Chaired** a session).
- Academy’s Lecture Workshop on “*Emerging Trends in Bioinorganic Chemistry*” sponsored by National Science Academies held on IIT Roorkee, Roorkee during March 8-10, 2018.
- Symposium on “*Frontiers in Inorganic Chemistry-II (FIC-II)*” held on IACS-Kolkata during March 8-9, 2018.
- **Plenary Lecture** in the National Symposium “Facets of Chemistry in Materials & Biology (FOCMB-2018)” held on the St. Xavier’s college (Autonomous), Kolkata during February 16-17, 2018.
- Lecture Workshop on Department of Chemistry, NIT-Rourkela on February 16, 2018.
- Academy Lecture Workshop on “Bioinorganic Chemistry and its Application” sponsored by National Science Academies held on Devanga Arts College, Madurai during January 29-31, 2018.
- Symposium on “Modern Trends in Inorganic Chemistry-XVII (MTIC)” held on Pune during December 11-14, 2017.
- Department of Chemistry, IIT-Indore on July 18, 2017.
- Department of Chemistry, IIT-Kharagpur on June 27, 2017.
- JNCASR, Bangalore on June 14, 2017.

- Department of Inorganic and Physical Chemistry, IISc Bangalore on June 13, 2017.
- Department of Chemistry, IIT-Roorkee on May 29, 2017.
- Department of Chemistry, IISER-Pune on April 28, 2017.
- Department of Chemistry, Delhi University, on March 30, 2017
- National conference on “Recent Advances in Chemical Sciences” during March 25-26, 2017 organized by Department of Chemistry, AMU, Aligarh.
- RSC symposium on 'Inorganic Chemical Biology’” during March 17-18, 2017 organized by Madurai Kamaraj University, Madurai.
- ***Institute Foundation Day Lecture***, NIT Patna on January 27, 2017
- ***Keynote Lecture*** at 5th Symposium of Advanced Biological Inorganic Chemistry (SaBIC-2017) held during January 7-11, 2017 in Kolkata.
- Institute for Intensive Research in Basic Sciences, M.G. University, Kerala on January 07, 2017
- Recent Trends in Inorganic and Supramolecular Chemistry held at Department of Chemistry at IIT Kanpur on October 26, 2016
- Department of Chemistry, Indian Institute of Technology Bombay on April 11, 2016
- National Symposium on Facets of Chemistry in Biology (FOCB-2016) held at St. Xavier’s College (Autonomous), Kolkata on February 22-23, 2016
- Department of Chemistry, Calcutta University, Kolkata on February 22, 2016
- 22nd Annual Meeting of National Magnetic Resonance Society, India (NMRS-2016) on 18-21st February, 2016 at Indian Institute of Technology, Kharagpur
- **Bronze medal lecture** at the 18th CRSI National Symposium in Chemistry in Chandigarh, India, during Feb. 4-7, 2016.
- Department of Chemistry, IISER-Pune on January 25, 2016.
- Frontiers in Chemistry-2016 held at National Institute of Science Education and Research (NISER), Bhubaneswar on January 09, 2016
- Lucknow Science Congress (LUSCON-2015) in the B. B. Ambedkar University at Lucknow during October 30 to November 1, 2015.
- 17th International Conference on Biological Inorganic Chemistry (ICBIC-17) held during July 20-24, 2015 in Beijing, China (and also have ***Chaired*** a session).
- Institute Colloquium at Institute of Inorganic and Analytical Chemistry, Goethe-Universität Frankfurt, Germany on July 15, 2015.
- Institute Colloquium at Institute of Organic Chemistry, University of Siegen, Germany, on July 13, 2015
- Institute Colloquium at Institute of Inorganic and Analytical Chemistry, Justus-Liebig-Universität, Gießen, Germany, on July 2, 2015.
- Institute Colloquium at Institute of Inorganic and Analytical Chemistry, Johannes Gutenberg-Universität, Mainz, Germany on June 16, 2015.
- Institute of Inorganic and Analytical Chemistry, Heidelberg University, Heidelberg, Germany on June 9, 2015.

- Institute Colloquium at Institute of Inorganic and Analytical Chemistry, Universität Stuttgart, Stuttgart, Germany on June 2, 2015.
- National Conference on “Recent Advances in Chemical Sciences-2015” held in the Department of Chemistry, the University of Burdwan, Burdwan, West Bengal during 19-21 February 2015 (and also have **Chaired** a session).
- 13th Eurasia Conference on Chemical Sciences (EuAsC2S-13) at the Indian Institute of Science (IISc), Bangalore, India, during Dec. 14-18, 2014.
- 7th Asian Biological Inorganic Chemistry Conference (AsBIC-7) held on Queensland, Australia during November 30- December 5, 2014 (and also have **Chaired** a session).
- 41st International Conference on Coordination Chemistry (ICCC41) held on Singapore during 21-25 July 2014 (and also have **Chaired** a session).
- **INSPIRE** (Innovation in Science Pursuit for Inspired Research) Science Camp held on Meerat during July 24-27, 2014.
- 8th International Conference on Porphyrins and Phthalocyanines (ICPP-8) held on Istanbul, Turkey during June 22-27, 2014 (and also have **Chaired** a session).
- Indo-French Symposium on 'Bio-inorganic Approaches to Current Health Problems' held on Pondicherry University, Pudhucherry during March 24 - 28, 2014.
- School of Chemistry, University of Hyderabad on March 7, 2014.
- India-France Collaborative Symposium titled “Functional metal-organics: Applications in materials and catalysis” held on NISER-Bhubaneshwar during February 24-26, 2014.
- Department of Chemistry, IISER-Kolkata on February 21, 2014.
- Symposium on Modern Trends in Inorganic Chemistry-XV (MTIC) held on IIT Roorkee on December 13-16, 2013
- 12th International Symposium on Applied Bioinorganic Chemistry (ISABC12) held on Guangzhou, China on December 3-6, 2013 (and also have **Chaired** a session).
- Department of Chemistry, NIT-Rourkela on November 15, 2013.
- 4th Asian Conference on Coordination Chemistry (ACCC-4) held on International Convention Center, Jeju, Korea on November 4-7, 2013 (and also have **Chaired** a session).
- International Conference on Interdisciplinary Areas with Chemical Sciences (ICIACS-2013) held on Punjab University, Chandigarh on October 30 - 1st November, 2013 organized by Punjab University in association with Institute of Nano Science and Technology, Mohali.
- 4th International Collaborative and Cooperative Symposium (ICCCS-4) held on IITK on October 24-26, 2013.
- Institute Colloquium at Department of Chemistry and Earth Sciences, Heidelberg University, Germany on July 1, 2013.
- Institute Colloquium at Institute of Chemistry and Biochemistry, Freie Universität, Berlin, Germany on June 03, 2013.
- Institute Colloquium at Institut für Anorganische und Analytische Chemie, Technische Universität, Braunschweig, Germany on May 29, 2013.
- Institute Colloquium at Department of Chemistry and Pharmacy, Friedrich-Alexander-University Erlangen-Nuremberg, Germany on May 13, 2013.

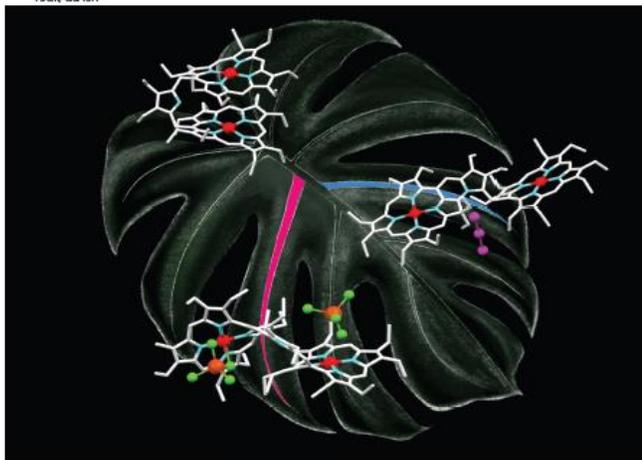
- Institute Colloquium at Institut für Anorganische Chemie, Georg-August-Universität Göttingen Tammannstrasse 4, Göttingen, Germany on April 23, 2013
- Institute Colloquium at Institut für Anorganische Chemie, Technische Universität Kaiserslautern, Germany on March 07, 2013.
- Institute Colloquium at Institut für Anorganische Chemie, Karlsruher Institut für Technologie, Germany on February 04, 2013.
- Department of Chemistry and Earth Sciences, Heidelberg University, Germany on January 08, 2013.
- Bioinorganic Chemistry Zing Conference held on Lanzarote, Spain during February 19-22, 2013.
- Academy Lecture Workshop on Bioinorganic Chemistry and its Application sponsored by National Science Academies held on School of Chemistry, Madurai Kamaraj University, Madurai-625021 during September 28-30, 2012.
- *ChemFest*, Department of Chemistry, IIT Kanpur on September 1, 2012.
- Department of Inorganic Chemistry, IACS-Kolkata on March 12, 2012.
- National Symposium on Advanced Functional Materials under UGC-CAS Program held on the Department of Chemistry, Banaras Hindu University, during February 11-12, 2012.
- Celebration Chemistry @IITK held on the Department of Chemistry, IIT Kanpur, during December 3-5, 2011.
- Workshop on Advances in Bioinorganic and Nano-Chemistry held on D.A-V. Post graduate College, Civil Lines, Kanpur, during November 12-13, 2011.
- Department of Chemistry, IIT Roorkee on June 10, 2011.
- Department of Chemistry, IIT Kharagpur on June 6, 2011.
- Department of Chemistry and Chemical Technology, Vidyasagar University on June 7, 2011.
- 13th CRSI and 5th RSC Symposium held on NISER-Bhubaneswar, during February 03-06, 2011.
- FICS-2010 Symposium held on IIT Guwahati, during December 03-04, 2010.
- International Conference on 60th Anniversary Conference on Coordination Chemistry in Osaka, JAPAN during September 27-30, 2010 organized by Chemical Society of Japan.
- International Conference on Porphyrin and Phthalocyanines held on New Mexico, USA during July 3-10, 2010.
- Department of Chemistry, University of California, Davis, USA on 12th July, 2010.
- DST Group Monitoring Workshop at Department of Chemistry, IITK on April 05, 2010.

List of Publications:

Volume 52
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PA PAPER
Sankar Prasad Rath et al.
Control of spin coupling through a redox-active bridge in a diradical(1,5) porphyrin dimer: step-wise oxidation enables isolation of a chlorin-porphyrin heterodimer and a diradical diradical with a singlet ground state

CHEMISTRY

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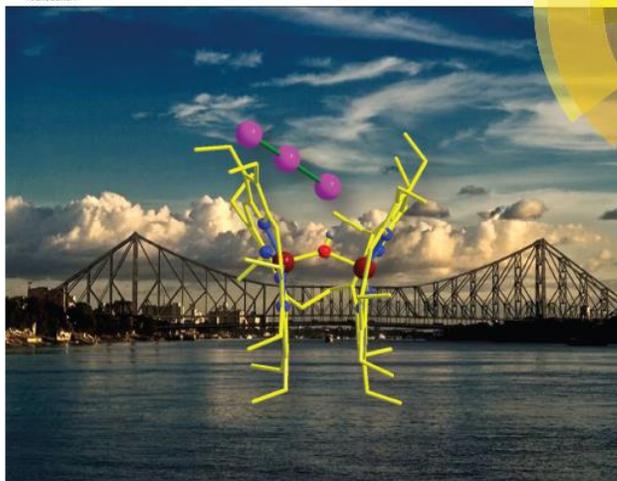
Front Cover:
S. P. Rath et al.
Through-Space Spin Coupling in a Silver(I) Porphyrin Dimer upon Stepwise Oxidations: Ag⁰-Ag¹, Ag¹-Ag¹, and Ag¹-Ag² Metallophilic Interactions

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PERSPECTIVE
Sankar Prasad Rath et al.
Hydroxo-bridged diiron(II) and dimanganese(II) bisporphyrins: modulation of metal spins by counter anions



DOI: 10.1002/chem.201600786

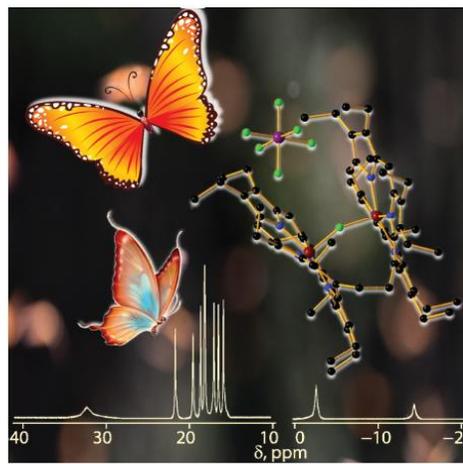
CHEMISTRY
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Electronic Structures | Hot Paper |

Diiron(III)-11-Fluoro Bisporphyrins: Effect of Bridging Ligand on the Metal Spin State

Debangsu Sil, Amit Kumar, and Sankar Prasad Rath[✉]

Dedicated to Professor Alan L. Balch on the occasion of his 75th birthday



Chem. Sci., 2016, 7, 1214-1223 | Wiley Online Library | 1214 | © 2016 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

Perspective /Frontier/ Review articles:

- 1. Binuclear Complexes with Single M-F-M Bridge (M: Fe, Mn, and Cu): A Critical Analysis of the Impact of Fluoride for Isoelectronic Hydroxide Substitution**
S. Sarkar, F. S. T. Khan, T. Guchhait and S. P. Rath*
Coord. Chem. Rev. **2023**, *479*, 215003. (*Invited article*)
- 2. Effect of heme-heme interaction: modulation of metal spin state in oxo/hydroxo/fluoro bridged diiron(III)/dimanganese(III) porphyrin dimers**
F. S. T. Khan, D. Sil, and S. P. Rath*
Adv. Inorg. Chem. **2023**, *81*, 95-184 (*Invited book chapter to the Special Volume devoted to 'Inorganic Chemistry in India'*)
- 3. Induction, Control and Rationalization of Supramolecular Chirogenesis using Metalloporphyrin tweezers: A Structure-Function Correlation**
A. Dhamija, P. Mondal, B. Saha, and S. P. Rath*
Dalton Trans. **2020**, *49*, 10679-10700 (*Invited Perspective article*)
- 4. Cyclic Metalloporphyrin Dimers: Conformational Flexibility, Applications and Future Prospects**
P. Mondal and S. P. Rath*
Coord. Chem. Rev. **2020**, *405*, 213117. (*Invited article*)
(Invited article for a special issue on "Coordination Chemistry and Catalysis Controlled by Ligand Design")
- 5. Multiheme Proteins: Effect of Heme-Heme Interactions**
D. Lai, F. S. T. Khan, and S. P. Rath*
Dalton Trans. **2018**, *47*, 14388-14401 (*Invited Frontier article*)
(Special Thematic Issue: Molecular metal-containing soft materials)
- 6. Oxo- and Hydroxo-bridged Diiron(III) Porphyrin Dimers: Inorganic and Bio-inorganic Perspectives and Effects of Intermacrocylic Interactions**
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7. **Hydroxo-Bridged Diiron(III) and Dimanganese(III) Bisporphyrins: Modulation of Metal Spins by Counter Anions**

F. S. T. Khan, T. Guchhait, S. Sasmal and S. P. Rath*

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8. **Ethane-bridged Porphyrin Dimer as Model of Di-heme Proteins: Inorganic and Bioinorganic Perspectives and Consequences of Heme-Heme Interactions**

D. Sil and S. P. Rath*

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133. **Binuclear Complexes with Single M-F-M Bridge (M: Fe, Mn, and Cu): A Critical Analysis of the Impact of Fluoride for Isoelectronic Hydroxide Substitution**
S. Sarkar, F. S. T. Khan, T. Guchhait and S. P. Rath*
Coord. Chem. Rev. **2023**, 479, 215003 (*Invited article*)
132. **Effect of heme-heme interaction: modulation of metal spin state in oxo/hydroxo/fluoro bridged diiron(III)/dimanganese(III) porphyrin dimers**
F. S. T. Khan, D. Sil, and S. P. Rath*
Adv. Inorg. Chem. **2023**, 81, 95-184 (*Invited book chapter to the Special Volume devoted to 'Inorganic Chemistry in India'*)
131. **Diheme Cytochromes: Effect of Mixed-Axial Ligation on the Electronic Structure and Electrochemical Properties with Cobaltic Heme**
S. Sanfui, S. Sarkar, and S. P. Rath*
J. Inorg. Biochem. **2023**, 240, 112109. (*Invited article in a Special Issue in the memory of Prof. F. Ann Walker*)
130. **Induction and Rationalization of Supramolecular Chirality in a Zn(II)porphyrin Dimer using Chiral Substrates: Role of Substrates in the Architectural Selectivity**
B. Saha, D. Chandel, C. Pal, and S. P. Rath*
J. Porphyrin and Phthalocyanines **2023**, 26, A-M (*Invited article in a Special Issue on the 70th birthday of Prof. Tomas Torres*)
129. **Control of Spin Coupling Through Redox-active Bridge in Dinickel(II) Porphyrin Dimer: Step-wise Oxidations Enable Isolations of the Chlorin-porphyrin Heterodimer and Dication Diradical with Singlet Ground State**
Y. A. Pandit, M. Usman, A. Sarkar, S. J. Shah, and S. P. Rath*
Dalton Trans. **2023**, 52, 877-891. (*Cover page article*)
128. **Cooperativity in Diiron(III)porphyrin Dication Diradical-Catalyzed Oxa-Diels-Alder Reactions: Spectroscopic and Mechanistic Insights**
S. Sarkar, P. Sarkar, D. Samanta, S. K. Pati and S. P. Rath*
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127. **Induction and Rationalization of Supramolecular Chirality in Highly-Flexible Zn(II)porphyrin Dimer: Structural, Spectroscopic and Theoretical Investigations**
D. Chandel, C. Pal, B. Saha, and S. P. Rath*
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126. **Hydrogen Bonding Interactions Trigger Induction of Chirality via Formation of a Cyclic Dimer**
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125. **Highly Oxidized Cobalt Porphyrin Dimer: Control of Spin Coupling via Bridge**
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124. **Long-Range Intramolecular Spin Coupling Through-Redox-Active Bridge Upon Step-wise Oxidations: Control and Effect of Metals**
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123. **Ferromagnetic Coupling in Oxidovanadium(IV)–Porphyrin Radical Dimers**
A. K. Singh, M. Usman, S. Sarkar, G. Sciortino, D. Kumar, E. Garribba, and S. P. Rath*
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121. **Through Bridge Spin Coupling in Homo and Hetero-bimetallic Porphyrin Dimers upon Stepwise Oxidations: A Spectroscopic and Theoretical Investigation**
A. Kumar, M. Usman, D. Samanta and S. P. Rath*
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120. **Magnesium Inserted Porphyrin Compound, Its Blends and Devices Thereof**
S. S. K. Iyer, S. P. Rath, A. Singh and Sk A. Iqbal
Patent Number (Indian): 372753 granted on 26 July 2021

119. **Design and control of axial binding with flexible Zn(II) porphyrin dimer: building-up novel polymer with *exo–endo* binding**
D. Chandel, B. Saha, S. A. Iqbal, and Sankar Prasad Rath*
J. Porphyrin and Phthalocyanines **2021**, *25*, 1161-1175 (*Invited article in a special issue on the 70th birthday of Prof. Lechoslaw Latos-Grażyński and the 65th birthday of Prof. Hiroyuki Furuta*)
118. **Fluoro-bridged dimanganese(III) porphyrin dimer: Effect of intermacrocyclic interactions in modulating metal spin state**
D. Sil, S. Banerjee, S. K. Ghosh, and S. P. Rath*
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116. **Induction, Control and Rationalization of Supramolecular Chirogenesis using Metalloporphyrin tweezers: A Structure-Function Correlation**
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115. **Hg^{•••}Hg^{•••}Hg Interaction Stabilizes Unusual Trinuclear Double Sandwich Structure of Mercury(II) Porphyrins**
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114. **Complexation of Chiral Zinc(II)Porphyrin Tweezer with Chiral Guests: Control, Discrimination and Rationalization of Supramolecular Chirality**
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113. **Molecule to Supramolecule: Chirality Induction, Inversion, and Amplification in a Mg(II)porphyrin Dimer Templated by Chiral Diols**
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112. **Intermacrocyclic Interaction Upon Stepwise Oxidations in a Monometallic Porphyrin Dimer: Ring *versus* Metal-centre Oxidations and Effect of Counter Anions**
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111. **Stepwise Oxidations in a Cofacial Copper(II) Porphyrin Dimer: Through Space Spin Coupling and Interplay between Metal and Radical spins**
A. Kumar, S. Sanfui, G. Sciortino, J.-D. Maréchal, E. Garribba, and S. P. Rath*
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110. **Through Space Spin Coupling in a Silver(II) Porphyrin Dimer upon Stepwise Oxidations: Ag^{II}/Ag^{II}, Ag^{II}/Ag^{III} and Ag^{III}/Ag^{III} Metallophilic Interactions**
A. K. Singh, M. Usman, G. Sciortino, E. Garribba and S. P. Rath*
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109. **Cyclic Metalloporphyrin Dimers: Conformational Flexibility, Applications and Future Prospects**
P. Mondal and S. P. Rath *
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108. **Counter Ion Triggers Stabilization of Two Geometrical Isomers of a Ni(II)dication Diradical Porphyrin Dimer: Role of Anion- π Interactions**
A. K. Pandey, M. Usman and S. P. Rath*
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A. Kumar, D. Sil, M. Usman and S. P. Rath*
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102. **Equatorial Ligand Plane Perturbations Lead to a Spin-state Change in a Diiron(III)porphyrin Dimer**
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92. **Cyclic Bisporphyrin Based Flexible Molecular Containers: Controlling Guest Arrangements and Supramolecular Catalysis by Tuning Cavity Size**
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88. **Complexation of Chiral Zinc-Porphyrin Tweezer with Achiral Diamines: Induction and Two-Step Inversion of Interporphyrin Helicity Monitored by ECD**
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87. **Hydroxo-Bridged Diiron(III) and Dimanganese(III) Bisporphyrins: Modulation of Metal Spins by Counter Anions**
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86. **Highly Oxidized Cobalt Porphyrin Dimer: Spin Coupling and Stabilization of 4e-Oxidized Product**
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83. **A Nonempirical Approach for Direct Determination of the Absolute Configuration of 1,2-Diols and Amino Alcohols using Mg(II)bisporphyrin**
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66. **Stoichiometry-controlled Supramolecular Chirality Induction in Magnesium (II) Porphyrin Dimer by Amino Alcohols: Mechanistic Insights and Effect of Ligand Bulkiness**
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65. **Efficient Host-Guest Complexation of a Bisporphyrin Host with Electron Deficient Guests: Synthesis, Structure and Photoinduced Electron Transfer**
P. Mondal and S. P. Rath*
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61. **Highly Enhanced Bisignate Circular Dichroism of Ferrocene-Bridged Zn(II) Bisporphyrin Tweezer with Extended Chiral Substrates due to Well-matched Host-Guest System**
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59. **Syn-Anti Conformational Switching in an Ethane-bridged Co(II)bisporphyrin Induced by External Stimuli: Effects of Inter-macrocylic Interactions, Axial Ligation and Chemical and Electrochemical Oxidations**
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56. **Unusual Stabilization of an Intermediate Spin of Iron upon Axial Phenoxide Coordination on a Diiron(III)bisporphyrin: Effect of Heme-Heme Interactions**
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