



CURRICULUM VITAE

Name:	Dr. Rakesh Kumar Pandey	 <p style="text-align: center;"><i>Photo</i></p>
Designation:	Associate Professor	
School:	Physical Sciences	
Department:	Chemistry	
Specialisation & Research Interests:	Materials science, Electrochemistry, Fuel cells, Electrocatalysis, Electroanalytical Chemistry, Nanocomposites, Metallic Nanowires, Conducting Polymers, Contact Electrification (Static Electricity), Supercapacitors, Organic-metallic Hybrid Materials, Metallo-Supramolecular Polymers, Polymer Thin Film Devices, Nanomaterials Synthesis.	
Email IDs (Official & Personal)	Official: rakeshpandey@mgcub.ac.in Personal: pandeyrake@gmail.com	
Mobile No.:	8448658842	
Address:	Dr. Rakesh Kumar Pandey Associate Professor, Department of Chemistry, Mahatma Gandhi Central University, Motihari (East-Champaran), Zila School Campus, Bihar 845401 Phone: 8448658842	

2. ACADEMIC QUALIFICATION (in reverse Chronological order):

Degree	Year	University / Board
PhD	2011	Raman Research Institute (RRI), Bangalore / Jawaharlal Nehru University, New Delhi
MSc	2004	SSJ Campus Almora, Kumaun University, Nainital, Uttarakhand
BSc	2002	SSJ Campus Almora, Kumaun University, Nainital, Uttarakhand

3. ANY OTHER QUALIFICATION:**4. PROFESSIONAL EXPERIENCE:**

Organisation/Institute/University	Position Held	Duration
Raman Research Institute, Bangalore and Kyushu Institute of Technology, Kitakyushu, Japan	JENESYS exchange researcher and RA	10 months (Aug 2010-May 2011)
National Institute for Materials Science (NIMS) Tsukuba, Japan.	NIMS Post-doctoral fellow	2 years (June 2011-May 2013)
National Institute for Materials Science (NIMS) Tsukuba, Japan.	JSPS Post-doctoral fellow	2 years (June 2013-May 2015)
National Institute for Materials Science (NIMS) Tsukuba, Japan.	NIMS Post-doctoral fellow	6 months (June 2015-Dec 2015)
Kyoto Institute of Technology (KIT), Kyoto, Japan and National University of Singapore	Assistant Professor/Researcher	3 years 8 months (Jan 2016-Aug 2019)

Amity University Gurugram, Amity Institute of Biotechnology	Associate Professor	2.5 months (Sep 2019 - Nov 2019)
Mahatma Gandhi Central University, Motihari (East-Champaran), Bihar	Associate Professor	2 months (Nov 2019 - Present)

5. ADMINISTRATIVE ASSIGNMENTS:

Position Held	Duration	Nature of Work

6. COURSES TAUGHT:

(1) Physical Chemistry Masters Course: CHEM4009

7. RESEARCH SUPERVISION:

A. Ph.D.:

- i. Awarded :
- ii. Submitted :
- iii. Ongoing :

B. M.Phil.:

- i. Awarded :
- ii. Submitted :
- iii. Ongoing :

C. Non-Degree Oriented (Master's Level Dissertation):

- i. **Awarded** :
- ii. **Submitted** :
- iii. **Ongoing** :

8. CONTRIBUTION TO CORPORATE LIFE OF THE UNIVERSITY:**9. MEMBERSHIP OF SOCIETIES / PROFESSIONAL BODIES:**

The Electrochemical Society (ECS), Chemical Society of Japan (CSJ), Society of polymer Science Japan (SPSJ) and The Electrochemical Society of Japan (ECS-J)

10. PUBLICATIONS :**A. BOOKS/MONOGRAPHS:****1. Authored:**

- i.
- ii.
- iii.

2. Edited:

- i.
- ii.
- iii.

B. PAPERS IN REFEREED/PEER REVIEWED JOURNALS:

1. Graphite-Aligned Ni/(NiOH)₂ Nanowire-based Aqueous Asymmetric Supercapacitors Exhibiting Excellent Cycle Stability, High Rate Performance, and Wide Operation Voltage.

Accepted at ChemistrySelect, 2019

Rakesh K. Pandey, Y. Totake, S. Soh, H Nakanishi.

2. Eco-Friendly, Direct Deposition of Metal Nanoparticles on Graphite for Electrochemical Energy Conversion and Storage

ACS Applied Materials and Interfaces, 2019, 11, 36525-36534.

Rakesh K. Pandey, L. Cheng, S. Teraji, H Nakanishi, S. Soh.

3. Correlating material transfer and charge transfer in contact electrification

J. Phys. Chem. C, 2018, 122, 16154-16160.

Rakesh K. Pandey, H. Kakehashi, H Nakanishi, S. Soh.

4. Electrochemical Charge Transfer Through the Supramolecular Discogen-DNA Hybrid Multi-layered Assembly.

ChemistrySelect, 2018, 3, 5874-5882.

Rakesh K. Pandey*, H. Pandey, Alpana Nayak.

5. Pd and Polyaniline Nanocomposite on Carbon Fiber Paper as an Efficient Direct Formic Acid Fuel Cell Anode.

Mater. Res. Exp., 2018, 5, 035518-7.

Rakesh K. Pandey*

6. Reversible and Continuously Tunable Control of Charge of Close Surfaces.

J. Phys. Chem. Lett., 2017, 8, 6142-6147.

Rakesh K. Pandey, Yajuan Sun, Hideyuki Nakanishi, and Siowling Soh

7. Metal Nanowire-Based Hybrid Electrodes Exhibiting High Charge/Discharge Rates and Long-Lived Electrocatalysis.

ACS App. Mater. Interf., 2017, 9, 36350-36357.

Rakesh K. Pandey, S. Kawabata, S. Teraji, T. Norisuye, S. Miyata, H. Nakanishi, S. Soh

8. One-dimensional anhydrous proton conducting channels formation at high temperature in a Pt(II)-based metallo-supramolecular polymer and imidazole system.

ACS App. Mater. Interf., 2017, 9, 13406-13414.

Chanchal Chakraborty, U. Rana, **Rakesh K. Pandey**, Satoshi Moriyama, and Masayoshi Higuchi

9. Geometrically Isomeric Pt(II)/Fe(II)-Based Heterometallo-Supramolecular Polymers with Organometallic Ligands for Electrochromism and Electrochemical ON/OFF Switching of Photoluminescence.

J. Mater. Chem. C., 2016, 4, 9428-9437. (Also selected for the back cover page of the issue).

Chanchal Chakraborty, **Rakesh K. Pandey**, Satoshi Moriyama, and Masayoshi Higuchi

10. Selective DNA Recognition and Cytotoxicity of Water Soluble Helical Metallo-supramolecular Polymers.

Bioconjug. chem. (ACS), 2016, 27, 2307-2314.

Utpal Rana, Chanchal Chakraborty, **Rakesh K. Pandey**, Md. Delwar Hossain, Reiko Nagano, Takashi Minowa and Masayoshi Higuchi

11. Proton Conductive Nanosheets Formed by Alignment of Metallo-Supramolecular Polymers.

ACS App. Mater. Interf., 2016, 8, 13526-13531.

Rakesh K. Pandey, Utpal Rana, C. Chakraborty and Masayoshi Higuchi

12. An insight into ion-conduction phenomenon of gold nanocluster ligand based metallo-supramolecular polymers.

J. Mater. Chem. A, 2016, 4, 4398-4401.

Rakesh K. Pandey, C. Chakraborty, Utpal Rana, and Masayoshi Higuchi

13. Pt(II)-Based Metallo-Supramolecular Polymer with Controlled Unidirectional Dipoles for Tunable Rectification.

ACS App. Mater. Interf., 2015, 7, 19034-19042.

C. Chakraborty, **Rakesh K. Pandey**, Md. Delwar Hossain and Masayoshi Higuchi

14. Nano Molar Detection of Cd(II) Ions by Luminescent Metallo-Supramolecular Polymer Formation.

J. Mater. Chem. C, 2015, 3, 12186 (back cover of the journal issue).

Md. Delwar Hossain, **Rakesh K. Pandey**, Utpal Rana and Masayoshi Higuchi

15. Proton conduction in Mo(VI)-based metallo-supramolecular polymers.

Chem. Commun., 2015, 51, 11012. (inside front cover image of the journal issue).

Rakesh K. Pandey, Md. Delwar Hossain, Satoshi Moriyama, and Masayoshi Higuchi

16. Effect of a three-dimensional hyperbranched structure on the ionic conduction of metallo-supramolecular polymers.

RSC Adv., 2015, 5, 49224.

Rakesh K. Pandey, Md. Delwar Hossain, T. Sato, Satoshi Moriyama and Masayoshi Higuchi

17. A Heterometallo-Supramolecular Polymer with Cu(I) and Fe(II) Ions Introduced Alternately.

Eur. J. Inorg. Chem., 2014, 3763-3770.

Md. Delwar Hossain, Zhang, Jian, **Rakesh K. Pandey**, Takashi Sato and Masayoshi Higuchi

18. Cyclodextrin Inclusion Complexes (IC) with Thiocholesterol and their Self-assembly on Gold: A Combined Electrochemical and Lateral Force Microscopy (LFM) Study.

Thin Solid Films, 2014, 562, 367-371.

Rakesh K. Pandey* and V. Lakshminarayanan

19. Real-time humidity-sensing properties of ionically conductive Ni(II)-based metallo-supramolecular polymers.

J. Mater. Chem. A, 2014, 2, 7754 (**inside front cover image of the journal issue**).

Rakesh K. Pandey, Md. Delwar Hossain, Satoshi Moriyama, and Masayoshi Higuchi

20. A quick electrochemical approach for synthesizing the metal nanostructures stabilized with conducting polymers.

Mater. Res. Bull., 2014, 50, 413.

Rakesh K. Pandey* and V. Lakshminarayanan

21. Thin film of Palladium nanodendrites supported on graphite electrode for catalyzing the oxidation of small organic molecules.

Cat. Lett., 2014, 144, 965-970.

Rakesh K. Pandey*, Sandeep Patnaik and V. Lakshminarayanan

22. Ionic Conductivity of Ni(II)-Based Metallo-Supramolecular Polymers: Effect of the Ligand Modification.

J. Mater. Chem. A, 2013, 1, 9016 (**front cover page of the Journal Issue**).

Rakesh K. Pandey, Md. Delwar Hossain, Satoshi Moriyama, and Masayoshi Higuchi

23. Fluorescent color modulation in Zn(II)-based metallosupramolecular polymer films by electronic-state control of the ligand.

Dalton Trans., 2013, 42, 16036.

Takashi Sato, **Rakesh K. Pandey** and Masayoshi Higuchi

24. Ethanol electrocatalysis on gold and conducting polymer nanocomposites: A study of the kinetic parameters.

App. Catal. B, Environmental, 2012, 125, 271-281.

Rakesh K. Pandey* and V. Lakshminarayanan

25. Porphyrin aggregates in the form of nanofibers and their unusual aggregation induced emission.

J. Por. Phthal., 2012, 16, 1-4.

Rakesh K. Pandey*, Upendra Chitgupi and V. Lakshminarayanan

26. Enhanced electrocatalytic activity of Pd-dispersed 3,4-polyethylene-dioxythiophene film in hydrogen evolution and ethanol electro-oxidation reactions.

J. Phys. Chem. C, 2010, 114, 8507.

Rakesh K. Pandey and V. Lakshminarayanan

27. Enhanced optical nonlinearity of polyaniline-porphyrin nanocomposite.

J. Phys. Chem. C, 2009, 113, 8630.

Rakesh K. Pandey, C. S. Suchand Sandeep, Reji Philip and V. Lakshminarayanan

28. Electro-oxidation of formic Acid, methanol, and ethanol on electrodeposited Pd-polyaniline nanofiber films in acidic and alkaline medium.

J. Phys. Chem. C, 2009, 113, 21596.

Rakesh K. Pandey and V. Lakshminarayanan

29. Electrocatalytic studies of cytochrome c functionalized single walled carbon nanotubes on self-assembled monolayer of 4-ATP on gold.

J. Electroanal. Chem., 2009, 627, 63.

D.H. Nagaraju, **Rakesh K. Pandey** and V. Lakshminarayanan

30. Electron transfer studies on cholesterol LB films assembled on thiophenol and 2-naphthalenethiol self-assembled monolayers.

J. Coll. Inter. Sci., 2007, 315, 528.

Rakesh K. Pandey, K. A. Suresh and V. Lakshminarayanan

C. PAPERS IN CONFERENCES PROCEEDINGS:

1. Formation of porphyrin /polyaniline nanostructured thin film by layer by layer assembly and application in ppb level lead sensing.

Proceedings of Sensors-15 -2010 c23-1-c23-3.

Rakesh K Pandey, Avinash B.S. and V. Lakshminarayanan

11. Patents/Copyrights /IPR (If Any)

1: Japanese patent application (特願2014-528113)

2: PCT application (PCT/JP2013/070299).

Rakesh K. Pandey, M. Higuchi, S. Moriyama: WO2014021208 A1

Google link: <http://www.google.com/patents/WO2014021208A1?cl=en>

Patentscope WIPO link: <http://patentscope.wipo.int/search/en/WO2014021208>

12. INVITED TALKS:

1. Unusual charging states of the polymers on mechanical deformation.

Rakesh K. Pandey, H. Nakanishi, S. Siowling.

Invited talk at the 6th KIT international symposium on advanced polymer materials and fiber science, Kyoto Institute of Technology, Kyoto, Japan Sep 23, 2016.

2. Reversible charge states of materials in proximity

Rakesh K. Pandey, H. Nakanishi, S. Siowling.

Invited talk at the 7th KIT international symposium on advanced polymer materials and fiber science, Kyoto Institute of Technology, Kyoto, Japan Mar 27, 2017.

13. RESEARCH PROJECTS (COMPLETED / ONGOING):

1: Development of Metallo-supramolecular polymers for high proton conductivity:
Completed Research project

JSPS post-doctoral fellowship (Japan Society for the Promotion of Science), 2013-2015.
Research grant of 2.4 million.

14. PARTICIPATION & PRESENTATIONS IN SEMINARS/SYMPOSIA/WORKSHOPS/CONFERENCES:

1. Electron transfer studies on cholesterol LB films assembled on thiophenol and 2-naphthalenethiol self-assembled monolayers.

Oral presentation, National workshop on immobilized enzyme technology for sensors. (NWIETS), M. D. University Rohtak, India, 2007.

2. Self-assembled monolayer formation by host-guest inclusion complex (IC) of cyclodextrin and thiocholesterol.

Poster presentation, International conference on functional materials (FM-08), Indian Institute of Technology, Chennai, 2008.

3. Nanotriobological study of cyclodextrin inclusion complex (IC) with cholesterol on gold surface. A combined electrochemical and lateral force microscopy analysis.

Poster presentation, Recent advances in surface engineering (RASE-09), National Aeronautical Laboratories, Bangalore, 2009.

4: Formation of porphyrin/polyaniline nanostructures by Layer- by -Layer assembly and their application in ppb level lead sensing.

Oral presentation at 216th Electrochemical Society meeting, Vienna (Austria) Oct. 2009.

5: Direct ethanol fuel cell consisting of polyaniline/Pd nano composition electrode.

78th Spring Meeting of Japan Electrochemical Society; Yokohama National University, Yokohama, Japan. March 2011.

6: Research pertaining to the utilization of conducting polymer composite catalyst for direct Ethanol fuel cells.

48th, Kyushu Branch Chemical Society Meeting, Kitakyushu International Conference Center, Kokura, Kitakyushu, Japan July 2011.

7: Formation of porphyrin /polyaniline nanostructured thin film by layer by layer assembly and application in ppb level lead sensing. ***Also selected for the best oral presentation award**

15th national seminar on physics and technology of sensors (15th NSPTS), University of Pune, India, 2010.

8: Electron transfer and electrocatalytic studies on some organic and conducting polymer nanocomposite thin films.

Oral presentation at Department of Biological Functions and Engineering, Kyushu Institute of Technology. October 2010.

- 9:** Electrochemical properties of organic-metallic hybrid polymer films.
Oral presentation at 92nd CSJ meeting, Keio University, Yokohama, Japan, March 2012.
- 10:** Electrical conductivity measurements on organic-metallic hybrid polymer thin films.
Oral presentation at 61st SPSJ meeting, Pacific Yokohama, Yokohama, Japan, May 2012.
- 11:** High proton conductivity in (bisterpyridyl)-benzene based metallo-supramolecular polymers.
Oral presentation at 61st Symposium on Macromolecules-2012, Nagoya Institute of Technology, Nagoya, Japan, September -2012.
- 12:** Tailoring the Structure of Phenanthroline Based Organic-Metallic Hybrid Polymers for Humidity Sensitive Conductivity.
Oral presentation at 93rd CSJ meeting, Ritsumeikan University, Kyoto, Japan, March 2013.
- 13:** Ni(II) and Phenanthroline Based Metallo-Supramolecular Polymers for Humidity Sensitive Conductivity.
Oral presentation at 62nd SPSJ meeting, Kyoto International Center, Kyoto, Japan, May 2013.
- 14:** Humidity Responsive High Ionic Conductivity of Organic-metallic Hybrid Polymers.
Poster Presentation at 201 NIMS conference-July 2013, Tsukuba Japan.
- 15:** Humidity Responsive High Ionic Conductivity of Organic-Metallic Hybrid Polymers.
Oral presentation at 62nd Symposium on Macromolecules, Kanazawa University, Kanazawa Japan, Sep-2013.
- 16:** Metallo-supramolecular Polymers as a New Class of Ion Conducting Materials
Oral Presentation at 63rd Japan Society of Coordination Chemistry (JSCC) conference at Okinawa, Japan, Nov-2013.
- 17:** Proton Conductance of Mo(II)-Phenanthroline-Based Metallo-Supramolecular Polymers.
Electrochemical Society of Japan 81st spring meeting, 29-31 March 2014, Kansai University, Osaka, Japan.
- 18:** Metallo-supramolecular polymers as humidity responsive ionic conductors.
225th Electrochemical Society meeting (225th ECS)-2014, Orlando, Florida, USA.
- 19:** Proton Conductance of Mo(II)-Phenanthroline-Based Metallo-Supramolecular Polymers.
Poster Presentation at 2014 NIMS conference-July 2014, Tsukuba Japan.
- 20:** Proton Conductance of Mo(II)-Phenanthroline-Based Metallo-Supramolecular Polymers.
Oral Presentation at 64th Japan Society of Coordination Chemistry (JSCC) conference at Chuo University, Tokyo, Japan, Sep-2014.
- 21:** Proton Conductance of Mo(II)-Phenanthroline-Based Metallo-Supramolecular Polymers
Oral presentation at 63rd Symposium on Macromolecules, Nagasaki University, Nagasaki Japan, Sep-2014.

22: Humidity-responsive ionic conductivity of linear and 3-dimensional metallo-supramolecular polymers.

Oral presentation at 65th Chemical Society of Japan meeting, Nihon University, Chiba, Japan, March-2015

23: Ionic conductivity of linear and 3-dimensional metallo-supramolecular polymers.

Poster presentation at Pacifichem 2015, December-2015 at Honolulu, Hawaii, USA

24. Unusual charging states of the polymers on mechanical deformation.

Invited talk at the 6th KIT international symposium on advanced polymer materials and fiber science, Kyoto Institute of Technology, Kyoto, Japan Sep 23, 2016.

25. Reversible charge states of materials in proximity

Invited talk at the 7th KIT international symposium on advanced polymer materials and fiber science, Kyoto Institute of Technology, Kyoto, Japan Mar 27, 2017.

15. AWARDS, FELLOWSHIPS & OTHER DISTINCTIONS:

1: Best presentation prize 2014 NIMS conference 1-3rd July Tsukuba, Japan, **2014**

2: JSPS post-doctoral fellowship and Research grant (**Japan Society for the Promotion of Science**), **2013-2015**

3: JENESYS exchange fellowship (**Japan East Asia Network of Exchange of Students and Youths**), Raman Research Institute India and Kyushu Institute of Technology, Japan, **2010**

4: Best presentation prize 15th national seminar on physics and chemistry of sensors, (15th NSPTS) Pune University, **2010**

5: Highest marks in MSc (Physical Chemistry) SSJ Campus, Kumaun University Batch of 2004, **2004**

6. Invited talks at the 6th and 7th **KIT international symposium** on advanced polymer materials and fiber science, Kyoto Institute of Technology, Kyoto, Japan in **Sep 2016** and **Mar 2017**

7. Editorial board member of "Journal of Nanoscience, Nanoengineering, and Applications" and "Journal of catalyst and catalysis": STM journals (Open access) India

8. Membership of The Electrochemical Society (ECS), Chemical Society of Japan (CSJ), Society of polymer Science Japan (SPSJ) and The Electrochemical Society of Japan (ECS-J)

16. ANY OTHER SIGNIFICANT INFORMATION:

Rakesh Kumar Pandey

(Name of Faculty)