



Dr. Rahul Dev Mukhopadhyay
M.Sc., Ph.D.
Assistant Professor
Department of Chemistry
Ramananda College, Bishnupur
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AREAS OF INTEREST/SPECIALISATION

- Stimuli-responsive materials.
- Functional metal-organic materials.
- Systems chemistry.
- Porous organic cages.

ACADEMIC QUALIFICATION

- B.Sc. (2008), Presidency College, University of Calcutta, Kolkata, West Bengal, India.
- M.Sc. (2010), second rank holder, Ramakrishna Mission Residential College, University of Calcutta, Narendrapur, West Bengal, India.
- National Eligibility Test (NET) in Chemical Science, 2009 (CSIR category, All India Rank-100).
- Ph.D. (2017), Academy of Scientific & Innovative Research (AcSIR), CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST), Trivandrum, Kerala, India.

RESEARCH EXPERIENCE

From	To	Name and Address of Company / Organization	Position held
2010	2012	CSIR-NIIST, Trivandrum, Kerala, India	CSIR-Junior Research Fellow

2012	2015	CSIR-NIIST, Trivandrum, Kerala, India	CSIR-Senior Research Fellow
2015	2017	CSIR-NIIST, Trivandrum, Kerala, India	Project Assistant (Grade IV)
2017	2018	Centre for Self-assembly and Complexity (CSC) Institute for Basic Science (IBS), Pohang, South Korea	Postdoctoral Fellow
2018	2020	CSC, IBS, Pohang, South Korea	CSC-Research Fellow
2020	2021	CSC, IBS, Pohang, South Korea	Team Leader

ACADEMIC EXPERIENCE

- Guest Lecturer at Pohang University of Science and Technology (POSTECH), Pohang, South Korea (2017-2019).
- Serving as a reviewer for the following international journal: Phys. Chem. Chem. Phys. (RSC)

ADMINISTRATIVE EXPERIENCE

- Team Leader at the Centre for Self-assembly and Complexity (CSC), Institute for Basic Science (IBS), Pohang, South Korea (June, 2020-April, 2021).

PUBLICATIONS

(Journals/Proceedings/Chapter in Books)

JOURNALS

2020

1. **R. D. Mukhopadhyay**,^{†*} S. Choi,[†] S. K. Sen, I. –C. Hwang, and K. Kim*; “Transient Self-assembly Processes Operated by Gaseous Fuels under Out-of-Equilibrium Conditions” *Chem. Asian J.* 15 (2020) 4118 († equal contribution)
2. I. Kim, Y Kim, D. Cho, I. –C. Hwang, **R. D. Mukhopadhyay**, H. Song, A. Dhamija, Y. H. Ko, W. Hwang, H. Lee, S. Kim, M. –H. Baik*, and K. Kim*; “Gigantic Porphyrinic Cages” *Chem* 6 (2020) 3374

3. I. Hwang^{†*}, **R. D. Mukhopadhyay**^{†*}, P. Dhasaiyan, S. Choi, S.-Y. Kim, Y. H. Ko, K. Baek, and K. Kim*; “Audible Sound-controlled Spatiotemporal Patterns in Out-of-Equilibrium Systems” *Nat. Chem.* 12 (2020) 808 († equal contribution)
 4. X. Yu, B. Wang, Y. Kim, J. Park, S. Ghosh, B. Dhara, **R. D. Mukhopadhyay**, J. Koo, I. Kim, S. Kim, I. –C. Hwang*, S. Seki*, D. M. Guldi*, M. –H. Baik* and K. Kim*; “Supramolecular Fullerene Tetramers Concocted with Porphyrin Boxes Enable Efficient Charge Separation and Delocalization” *J. Am. Chem. Soc.* 142 (2020) 12596
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2019

1. S. Choi, **R. D. Mukhopadhyay***, Y. Kim, I. –C. Hwang, W. Hwang, S. K. Ghosh, K. Baek* and K. Kim*; “Fuel-Driven Transient Crystallization of a Cucurbit[8]uril-Based Host-Guest Complex” *Angew. Chem. Int. Ed.* 58 (2019) 16850 (*VIP article*)
-

2018

1. **R. D. Mukhopadhyay**[†], Y. Kim[†], J. Koo[†] and K. Kim*; “Porphyrin Boxes” *Acc. Chem. Rec.* 51 (2018) 2730 († equal contribution)
 2. Y. Kim, J. Koo, I. –C. Hwang, **R. D. Mukhopadhyay**, S. Hong, J. Yoo, A. A. Dar, I. Kim, D. Moon, T. J. Shin, Y. H. Ko and K. Kim*; “Rational Design and Construction of Hierarchical Superstructures using Shape-Persistent Organic Cages: Porphyrin Box-based Metallosupramolecular Assemblies” *J. Am. Chem. Soc.* 140 (2018) 14547
 3. **R. D. Mukhopadhyay**, G. Das and A. Ajayaghosh*; “Stepwise Control of Host–Guest Interaction using a Coordination Polymer Gel” *Nat. Commun.* 9 (2018) 1987
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2017

1. **R. D. Mukhopadhyay**, B. Vedanarayan and A. Ajayaghosh*; “Creation of “Rose Petal” and “Lotus Leaf” Effects on Alumina by Surface Functionalization and Metal-Ion Coordination” *Angew. Chem. Int. Ed.* 56 (2017) 16018 (*Hot paper*)
-

2016

1. V. S. Nair, **R. D. Mukhopadhyay**, A. Saeki, S. Seki and A. Ajayaghosh*; “A π -gel Scaffold for Assembling Fullerene to Photoconducting Supramolecular Rods” *Sci. Adv.* 2 (2016) e1600142
-

2015

1. **R. D. Mukhopadhyay** and A. Ajayaghosh*; “Living Supramolecular Polymerization” *Science* 349 (2015) 241
 2. R. Thirumalai, **R. D. Mukhopadhyay**, V. K. Praveen and A. Ajayaghosh*; “A Slippery Molecular Assembly allows Water as a Self-Erasable Security Marker” *Sci. Rep.* 5 (2015) 09842
 3. **R. D. Mukhopadhyay**, V. K. Praveen, A. Hazra, T. K. Maji and A. Ajayaghosh*; “Light Driven Mesoscale Assembly of a Coordination Polymeric Gelator into Flowers and Stars with Distinct Properties” *Chem. Sci.* 6 (2015) 6583
-

2014

1. **R. D. Mukhopadhyay**, V. K. Praveen and A. Ajayaghosh*; “Photoresponsive Metal-Organic Materials: Exploiting the Azobenzene Switch” *Mater. Horiz.* 1 (2014) 572
-

2013

1. K. K. Kartha, **R. D. Mukhopadhyay** and A. Ajayaghosh*; “Supramolecular Gels and Functional Materials Research in India” *Chimia* 67 (2013) 51
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Google Scholar link/ORCID ID:

https://scholar.google.co.uk/citations?user=yN1ef_AAAAAJ&hl=en&oi=ao

<https://orcid.org/0000-0003-0802-5344>

PATENT

- Inventors: B. Vedanarayan, **R. D. Mukhopadhyay**, A. Ajayaghosh *; “Development of Superhydrophobic Coatings for Energy Saving Mechanical Motion and Related Applications” Patent Application Number: 201711037002 A, Publication Date : 26/04/2019.

PRESENTATION

SEMINAR

1. **R. D. Mukhopadhyay**, 4th Calcutta University Post-Graduate Centenary Seminar Contest 2010, March 06, 2009, Department of Chemistry, Scottish Church College, Kolkata, India. (*Emerged as a joint winner in the contest*)
2. **R. D. Mukhopadhyay**, Topic presentation event organized by Research Scholars’ Association of Indian Association for the Cultivation of Science (Cult Vision’ 10), February 12-13, 2010, IACS, Kolkata, India. (*Adjudged winner in the Best Presentation category*)
3. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Azobenzene Derived Photochromic MOF-gels. 8th JNC Research Conference on Chemistry of Materials, September 30-October 2, 2012, Trivandrum, Kerala, India.
4. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Tuning the Properties of Coordination Polymeric Gels. HEAM Scientist 2012 (A national level meet of young scientists of Hydrogen Energy and Advanced Materials), December 14, 2012, University of Kerala, Trivandrum, Kerala, India.
5. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Mesoscale Self-Assembly of Photoresponsive Co-ordination Polymers. Polymer Conference for

Young Researchers (PCYR-2014), October 18, 2012, Trivandrum, Kerala, India. (*Invited Talk*)

6. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Tuning of Mesoscale Self-Assembly in Supramolecular Polymers. Saturday Symposium for Students (S₃), January 16, 2016, Trivandrum, Kerala, India. (*Invited Talk*)
7. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Self-Assembly of Metal-Organic Materials: Futuristic Applications. National Seminar on Recent Advances in Chemical Sciences (RACS-17), March 13, 2017, University College, Trivandrum, Kerala, India. (*Invited Talk*)
8. **R. D. Mukhopadhyay**,* K. Kim,* Chemical Fuel-Driven Transient Crystallization. 126th General Meeting of the Korean Chemical Society, October 19-21, 2020, Suwon, South Korea. (*Invited Talk*)

POSTER

1. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Azobenzene Derived Photochromic MOF-gels. 8th JNC Research Conference on Chemistry of Materials, September 30-October 2, 2012, Trivandrum, Kerala, India.
2. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Tweaking the Morphology of Porous Coordination Polymers at the Mesoscale by Light Induced Pre-Synthetic Modification. Nano India-2013, February 19-20, 2013, Trivandrum, Kerala, India.
3. R. Thirumalai, **R. D. Mukhopadhyay**, A. Ajayaghosh,* Fluorescent π -Assembles for Security Applications. ACS on Campus event, November 29, 2013, Trivandrum, Kerala, India.
4. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Modulation of Mesoscale Self-Assembly in a Coordination Polymeric Gel by Light. 8th Asian Photochemistry Conference “APC-2014”, November 10-13, 2014, Trivandrum, Kerala, India.
5. **R. D. Mukhopadhyay**, A. Ajayaghosh,* Light Induced Modulation of Mesoscale Self-Assembly in a Coordination Polymeric Gel. RIKEN Center for Emergent Matter Science International Symposium on Supramolecular Chemistry & Functional Materials (CEMSupra 2014), December 13-26, 2014, Tsumagoi, Gunma, Japan.
6. S. Choi, **R. D. Mukhopadhyay**,*; W. Hwang, K. Baek,* K. Kim,* Stimuli-responsive Self-assembly of Competing Supramolecular

Amphiphiles. The Korean Chemical Society (KCS 2018), October 17-19, 2018, Daegu, Korea.

7. S. Choi, **R. D. Mukhopadhyay,***; W. Hwang, K. Baek,* K. Kim,* Conformation-controlled Supramolecular Polymerization of Host-guest Complexes. The Korean Chemical Society (KCS 2019), April 17-19, 2019, Suwon, Korea.

PERSONAL DETAILS IN BRIEF

Date of Birth : 14-07-1985

Date of joining (Ramananda College): 19/04/2021

Marital Status : Married

Nationality : Indian

Current Status : Assistant Professor

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