

## CV (Dr. Indrajit Maity)

1. **Name:** Dr. Indrajit Maity

2. **Full correspondence address:** Assistant Professor

Centre for Nano and Material Sciences (CNMS)  
JAIN (Deemed-to-be-university)  
Jain University Global Campus, Jakkasandra Post  
Kanakpura Road, Ramanagaram  
Bangalore - 562112



3. **Google Scholar Profile:** <https://scholar.google.co.in/citations?user=AVm6OugAAAAJ&hl=en>

4. **Email(s) and contact number(s):** [maityindrajitchem@gmail.com](mailto:maityindrajitchem@gmail.com), [indrajit.maity@jainuniversity.ac.in](mailto:indrajit.maity@jainuniversity.ac.in)

Contact: +918918346596

5. **Institution:** Centre for Nano and Material Sciences (CNMS),  
Jain University Global Campus, Jakkasandra Post  
Kanakpura Road, Ramanagaram  
Bangalore - 562112

6. **Date of Birth:** 10 October 1985

7. **Gender (M/F/T):** Male

8. **Category Gen/SC/ST/OBC:** General

9. **Whether differently abled (Yes/No):** No

10. **Academic Qualification (Undergraduate Onwards):**

	Degree	Year	Subject	University/Institution	% of marks
1.	B.Sc (UG)	2006	Chemistry (Hons.), minor in Mathematics and Physics	Vidyasagar University/ Kharagpur College	60.9
2.	M.Sc (PG)	2008	Chemistry, organic chemistry as specialization	Vidyasagar University/ Jhargram Raj College	71.9
3.	Ph.D (Doctoral)	2015	Organic chemistry	Indian Institute of Technology Indore	NA

11. **Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award:**

**Ph.D thesis title:** "Molecular self-assembly of peptide bolaamphiphiles and their applications in nanocatalysis and biology".

**Guide's Name:** Prof. Apurba K. Das

**Institute:** Indian Institute of Technology Indore, India

**Year of Award:** 2015

## CV (Dr. Indrajit Maity)

### 12. Work experience (in chronological order):

S.No.	Positions held	Name of the Institute	From	To	Pay Scale
1.	Assistant Professor	Centre for Nano and Material Sciences (CNMS), Jain University Global Campus, Bangalore	01.09.2022	To date	as per norms
2.	Visiting scientist	Ben-Gurion University of the Negev, Israel	02.05.2022	31.08.2022	NA
3.	Postdoctoral Research Associate	Johannes Gutenberg University of Mainz, Germany	01.02.2021	30.04.2022	TVL-13 (II)
4.	Postdoctoral Research Associate	Institute for Macromolecular Chemistry / Albert Ludwig University of Freiburg, Germany	16.01.2019	31.01.2021	TVL-13 (I)
5.	Postdoctoral Research Associate	Ben-Gurion University of the Negev, Israel	01.04.2015	15.01.2019	Consolidated pay = 8500 NIS/Month

### 13. External Research Funding

#### 1. 2023: Ramanujan Fellowship Proposal (SERB)

**Title:** Precise Control Over Self-assembly of Robotic Bolaamphiphiles: A New Scope for Targeted Drug Delivery and Molecular Medicine

**Status:** Granted

**Note:** Not commercialized according to new rule that the candidate accepted a permanent academic position prior the project is granted.

#### 2. 2023: SERB SURE SCHEME

**Title:** A Facile Approach for Designing Supramolecular Interlocked Nanomachines Guided by Secondary Nucleation

**Status:** Granted (30 Lakh) for the year 2023-2026

#### 3. 2023: SERB SRG SCHEME

**Title:** Chemo-mechanical guided macroscopic soft actuator and boat for forced self-assembly, cargo transport, and release

**Status:** Granted (30 Lakh) for the year 2023-2026

**Note:** Not commercialized as one SERB project running

**CV (Dr. Indrajit Maity)**

**14. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant:**

<b>S. No</b>	<b>Award / Recognition/ Fellowship / Certificate</b>	<b>Awarding Agency</b>	<b>Year</b>
1.	Recipient of prestigious Ramanujan Fellowship <u>(Note: Because the candidate accepted a permanent academic position in the meantime, the fund is not sanctioned according to new rule)</u>	Science and Engineering Research Board (SERB), India	2023
2.	INSC young researcher award	MSME and Corporate Affairs, Govt. of India	2022
3.	Invited Talk	"FUTURE OF CHEMISTRY" SYMPOSIUM SERIES-5th Symposium, TIFR Mumbai	2021
4.	Invited Talk	TIFR Hyderabad	2021
5.	Marie S. Curie (FRIAS) Cofund Fellowship	European Union	2020
6.	Seal of excellence in Marie Curie IF proposal 2019 with higher score as 91.2	European Union	2020
7.	Invited Talk	IPS Academy, Indore, India	2019
8.	Invited Talk	Oriental University Indore, India	2019
9.	Invited Talk	DESY-GIF Young Scientists' Meeting-"Origins: from elementary particles to complex chemical and biological systems" DESY Hamburg, Germany	2019
10.	Invited Talk	4th ERC Grantees Conference-From supramolecular towards systems chemistry, The David Lopatie Conference Centre, Weizmann Institute of Science, Israel	2018
11.	Prestigious PBC postdoctoral fellowship	Planning and Budgeting Committee (PBC) of the Council for Higher Education, in cooperation with the Ministry of Finance, Israel	2015
12.	Best research paper Award	Indian Institute of Technology Indore	2015
13.	Awarded senior research fellowship (SRF)	Council of Scientific and Industrial Research, New Delhi, India	2012
14.	Awarded junior research fellowship (JRF)	Council of Scientific and Industrial Research, New Delhi, India	2010
15.	Qualifying the Graduate Aptitude Test (GATE), (All India Rank = 169)	Indian Institute of Technology Roorkee	2009

## CV (Dr. Indrajit Maity)

16.	Qualified National Eligibility Test (NET), CSIR category	CSIR-UGC, India	2009
17.	Awarded National Scholarship	Government of India	2000

### 15. Publication with peer-review process:

**Total Publications:** 24

**Citations:** 588

**h-index:** 16

**i10-index:** 19

- (1) Artificial Homeostasis Systems Based on Feedback Reaction Networks: Design Principles and Future Promises, V.A. Ranganath, **I. Maity\***, *Angew. Chem. Int. Ed.*, **2024**, *63*, e202318134 (IF = 16.82).
- (2) A Peptide-Based Oscillator, D. Dev, N. Wagner, B. Pramanik, B. Sharma, **I. Maity**, R. Cohen-Luria, E. Peacock-Lopez, G. Ashkenasy\*, *J. Am. Chem. Soc.* **2023**, *145*, 48, 26279–26286 (IF = 16.3).
- (3) Engineering Reaction Networks by Sequential Signal Processing, **I. Maity**,\* D. Dev, R. Cohen-Luria, N. Wagner, G. Ashkenasy\*, *Chem*, **2023**, *2024*, *10*, 1132-1146 (IF = 25.83).
- (4) pH Feedback Systems to Program Autonomous Self-Assembly and Material Lifecycles. C Sharma, **I. Maity**, A Walther, *Chem. Commun.* **2023**, *59*, 1125. (IF = 6.06, Cit.=0).
- (5) Feedback and Communication in Active Hydrogel Spheres with pH Fronts: Facile Approaches to Grow Soft Hydrogel Structures. **I. Maity**, C. Sharma, F. Lossada, A. Walther\*, *Angew. Chem. Int. Ed.* **2021**, *60*, 22537. (IF = 16.82, Cit.=12).
- (6) Signaling in Systems Chemistry: Programming Gold Nanoparticles Formation and Assembly Using a Dynamic Bistable Network. **I. Maity**,\* D. Dev, K. Basu, N. Wagner and G. Ashkenasy\*, *Angew. Chem. Int. Ed.* **2021**, *60*, 4512. (IF = 16.82, Cit.=10)
- This paper was reviewed in Chemistry Views on Nov. 24, 2020 [https://www.chemistryviews.org/details/ezone/11274755/Programming\\_Nanoparticle\\_Formation\\_and\\_Assembly.html](https://www.chemistryviews.org/details/ezone/11274755/Programming_Nanoparticle_Formation_and_Assembly.html)
- (7) A Chemically Fueled Non-Enzymatic Bistable Network. **I. Maity**, N. Wagner, R. Mukherjee, D. Dev, E. Peacock-Lopez, R. Cohen-Luria and G. Ashkenasy\*, *Nature Commun.* **2019**, *10*, 4636 (IF = 17.69, Cit.=43).
- (8) Programming Multistationarity in Chemical Replication Networks. N. Wagner\*, R. Mukherjee, **I. Maity**, S. Kraun and G. Ashkenasy\*, *ChemSystemsChem* **2020**, *2*, e1900048 (IF = 3.1, Cit.= 4).
- (9) Open Prebiotic Environments Drive Emergent Phenomena and Complex Behavior, N. Wagner\*, D. Hochberg, E. Peacock-Lopez, **I. Maity**, G. Ashkenasy, *Life* **2019**, *9*, 45 (IF = 3.25, Cit.= 13).
- (10) Bistability and Bifurcation in Minimal Self-replication and Nonenzymatic Catalytic Networks. N. Wagner\*, R. Mukherjee, **I. Maity**, E. Peacock-Lopez and G. Ashkenasy\*, *chemphyschem*, **2017**, *18*, 1842 (IF = 3.52, Cit.= 17).
- (11) Lipase catalyzed dissipative self-assembly of a thixotropic peptide bolaamphiphile hydrogel for human umbilical cord stem cells proliferation. A. K. Das,\* **I. Maity**, H. S. Parmar, T. O. McDonald and M. Konda, *Biomacromolecules*, **2015**, *16*, 1157 (IF = 6.98, Cit.= 35).
- (12) Electrodeposited lamellar photoconductor nanohybrids driven by peptide self-assembly. M. K. Manna, S. K. Pandey, **I. Maity**, S. Mukherjee\* and A. K. Das\*, *ChemPlusChem*, **2015**, *80*, 583 (IF = 3.21, Cit.= 11).
- (13) Self-programmed nanovesicle to nanofiber transformation of a dipeptide appended bolaamphiphile and its dose dependent cytotoxic behavior. **I. Maity**, H. S. Parmar, D. B. Rasale and A. K. Das,\* *J. Mater. Chem. B*, **2014**, *2*, 5272 (IF = 7.57, Cit.= 20).

## CV (Dr. Indrajit Maity)

- (14) Lipase catalyzed inclusion of gastrodigenin for the evolution of blue light emitting peptide nanofibers. D. B. Rasale, **I. Maity** and A. K. Das,\* *Chem. Commun.*, **2014**, *50*, 8685 (IF = 6.06, Cit.= 20).
- (15) Photophysical study of a  $\pi$ -stacked  $\beta$ -sheet nanofibril forming peptide bolaamphiphile Hydrogel. **I. Maity**, T. K. Mukherjee\* and A. K. Das,\* *New J. Chem.*, **2014**, *38*, 376 (IF = 3.92, Cit.= 21).
- (16) In situ generation of redox active peptides driven by selenoester mediated native chemical ligation. D. B. Rasale, **I. Maity** and A. K. Das \*, *Chem. Commun.*, **2014**, *50*, 11397 (IF = 6.06, Cit.= 22).
- (17) Peptide nanofibers decorated with Pd nanoparticles to enhance the catalytic activity for C–C coupling reactions in aerobic conditions. **I. Maity**, D. B. Rasale and A. K. Das, \* *RSC Adv.*, **2014**, *4*, 2984 (IF = 4.03, Cit.= 18).
- (18) Peptide-nanofiber-supported palladium nanoparticles as an efficient catalyst for the removal of N-terminus protecting groups. **I. Maity**, M. K. Manna, D. B. Rasale and A. K. Das,\* *ChemPlusChem*, **2014**, *79*, 413 (IF = 3.21, Cit.= 28).
- (19) A new class of phase-selective synthetic  $\beta$ -amino acid based peptide gelator: From mechanistic aspects to oil spill recovery. M. Konda, **I. Maity**, D. B. Rasale and A. K. Das,\* *ChemPlusChem*, **2014**, *79*, 1482 (IF = 3.21, Cit.= 47).
- (20) Peptide self-assembly driven by oxo-ester mediated native chemical ligation. D. B. Rasale, **I. Maity**, M. Konda and A. K. Das,\* *Chem. Commun.*, **2013**, *49*, 4815 (IF = 6.06, Cit.= 21).
- (21) Exploiting self-assembly driven dynamic peptide based nanostructured library. **I. Maity**, D. B. Rasale and A. K. Das,\* *RSC Adv.*, **2013**, *3*, 6395 (IF = 4.03, Cit.= 11).
- (22) Colorimetric enzyme sensing assays via in situ synthesis of gold nanoparticles. D. B. Rasale, **I. Maity** and A. K. Das,\* *J. Clust. Sci.*, **2013**, *24*, 1163 (IF = 3.44, Cit.= 4).
- (23) Emerging  $\pi$ -stacked dynamic nanostructured library. D. B. Rasale, **I. Maity** and A. K. Das,\* *RSC Adv.*, **2012**, *2*, 9791 (IF = 4.03, Cit.= 17).
- (24) Sonication induced peptide-appended bolaamphiphile hydrogels for in situ generation and catalytic activity of Pt nanoparticles. **I. Maity**, D. B. Rasale and A. K. Das,\* *Soft Matter*, **2012**, *8*, 5301 (IF = 4.04, Cit.= 96). ([Top 10 most-read Soft Matter articles in April 2012.](#))

### Participation and contributions to academic conferences:

- (1) **I. Maity**, Complex Chemical Reaction Networks for Biomimetics and Materials Design, Seminar Series 2022, IIT Palakkad, (February 12, 2022), **Invited Talk**
- (2) **I. Maity**, Complex Chemical Reaction Networks for Biomimetics and Materials Design, "FUTURE OF CHEMISTRY" SYMPOSIUM SERIES- 5th Symposium, TIFR Mumbai, (October 28, 2021), **Invited Talk**
- (3) **I. Maity**, Systems Chemistry Approaches for Biomimetics and Material Design, TIFR Hyderabad, India (May 19, 2021), **Invited Talk**
- (4) virtual symposium in Systems Chemistry (Life-like emergent behavior in complex molecules and ensembles), May 18-20, 2020, **Attendee**
- (5) Macromolecular Colloquium. University of Freiburg, Germany, (February 26-28, 2020), **Attendee**
- (6) **I. Maity**, Systems Chemistry Approaches for Mimicking Biological Functions in Synthetic Networks, IIT Indore, India (November 4, 2019), **Visiting Talk**
- (7) **I. Maity**, Systems Chemistry Approaches for Mimicking Biological Functions in Synthetic Networks, IPS Academy, Indore, India (November 5, 2019), **Invited Talk**
- (8) **I. Maity**, Systems Chemistry Approaches for Mimicking Biological Functions in Synthetic Networks, Oriental University Indore, India (November 5, 2019), **Invited Talk**

## CV (Dr. Indrajit Maity)

(9) **I. Maity**, and G. Ashkenasy, System Chemistry Approaches for Mimicking Biological Functions in Synthetic Networks, DESY-GIF Young Scientists' Meeting-"Origins: from elementary particles to complex chemical and biological systems" DESY Hamburg, Germany, (March 18-20, 2019), **Invited Talk**

(10) Macromolecular Colloquium. University of Freiburg, Germany, (February 20-22, 2019), **Attendee**

(11) **I. Maity**, and G. Ashkenasy, Signal Transduction and Chemical Memory Emerging in a Synthetic Bistable Network, 4th ERC Grantees Conference-From supramolecular towards systems chemistry, The David Lopatie Conference Centre, Weizmann Institute of Science, Israel, (November 27-29, 2018), **Invited Talk**

(12) **I. Maity**; N. Wagner; R. Mukherjee; R. Cohen-Luria and G. Ashkenasy 'Switchable Bistable Non-Enzymatic Networks' Gordon Research Conference on system chemistry 2018, Jordan Hotel at Sunday River, Newry, ME (July 29 - August 3, 2018), **Poster Presentation**

(13) **I. Maity**, R. Mukherjee, N. Wagner, and G. Ashkenasy\* "Dual Fuel Assisted Bistable Non-Enzymatic Networks" International Conference, ICS 83, Israel Chemical Society, Tel-Aviv, Israel (February 13-14, 2018), **Oral presentation**

(14) **I. Maity**, R. Mukherjee, N. Wagner, and G. Ashkenasy\* "Dual Fuel Assisted Bistability in Autocatalytic Synthetic Chemical Networks" SysChem 2017, COST Action CM 1304, Sopron, Hungary (September 11-15, 2017), **Oral presentation**

(15) **I. Maity**, R. Mukherjee, and G. Ashkenasy\* "The Various Environmental Influences on Bistability, Emerging from Self-replicating Dynamic Peptide Networks" COST Action CM1304 – Emergence and Evolution of Complex Chemical Systems, WG2 WORKSHOP ON SUPRAMOLECULAR SYSTEMS CHEMISTRY 2016 (a scientific exchange program supported by the European Union), Barcelona, Spain (29th February to 2nd March 2016), **Oral Presentation**

(16) 29th annual meeting of Israel Society for Astrobiology and Origin of Life (ILASOL), held at Ben-Gurion University of the Negev, Israel (17th April 2016), **Attendee**

(17) Frontier Lecture Series in Chemistry (FLSC-2014). PACL Campus, IIT Indore, Indore, India (January 30-31, 2014), **Attendee**

(18) **I. Maity**, D. B. Rasale, and A. K. Das\*, 2012 Winter Workshop on Engineering at Nanoscale: From Materials to Biosensors, Indore, India (December 10 - 12, 2012), **Oral presentation**

(19) **I. Maity**, D. B. Rasale, and A. K. Das\*, "Sonication induced functional peptide hydrogel: A template for in situ generation of metal nanoparticles", International symposium on recent trends of research in chemistry, Midnapore College, West Bengal, India (31st October-1st November 2012), **Poster Presentation**

### 16. Any other Information:

**Research Experiences and Interests:** (Bioorganic Chemistry, Systems Chemistry, Molecular and Material Machines and Soft Functional Material Science.)

- Peptide and protein chemistry
- Peptide supported nanoparticles and catalysis
- Synthetic self-replicating systems
- Engineering complex chemical reaction networks and autocatalytic reactions (proteins, peptides, DNA, enzymes, and small organic molecules)
- Engineering bistable and oscillation reaction networks in a flow reactor
- Molecular machines
- Functional soft materials, sensing platform, and drug delivery

## CV (Dr. Indrajit Maity)

**Teaching Interests:** Basic organic chemistry courses, Reaction mechanism, Organic spectroscopy, Bio-organic chemistry, Supramolecular chemistry, Chemistry in life, Analytical chemistry and others

### **Teaching and Supervision Experience:**

**Ph.D Student:** Mr. Vinay A R (since December 2022)

**Working fields:** pH feedback systems, soft material machines and chemo-mechanical-propelled system

- 9/2022-to date: Analytical Chemistry and Organic spectroscopy courses for M.Sc. (Chemistry), CNMS, Jain University.
- 2/2020-09/2020: David Böcherer (Master Thesis), University of Freiburg, Germany
- 1/2016 – 03/2016: Sigi Nahman (Ph.D student), Ben-Gurion University of the Negev, Israel
- 11/2017–02/2018: Hadar Shelly (Master Project), Ben-Gurion University of the Negev, Israel
- 5/2018–12/2018: Oshrat B. David (Master Project), Ben-Gurion University of the Negev, Israel
- 7/2011 – 07/2013: Teaching for organic chemistry tutorial classes (1st year B.Tech), IIT Indore, India.
- 7/2010 – 07/2013: Tutor in organic chemistry laboratory classes (1st year B.Tech), IIT Indore, India.

### **Technical Skills:**

- **Synthesis and Characterization:** Solution phase and solid phase peptide synthesis and expert in peptide synthesizer, supramolecular hydrogel, metal nanoparticles synthesis and characterization, photo-polymerization and polymer hydrogel.
- **Purification and Kinetic Study:** Expert in kinetic study in reverse phase high performance liquid chromatography (HPLC), ultra-performance liquid chromatography (UPLC) and Preparative HPLC for peptide purification.
- **Material and Networks Characterization:** Spectroscopy (FT-IR, ATR, NMR, UV-Vis, Fluorescence, Plate Reader, Circular Dichroism), Mass Spectrometry, Microscopy (Polarized Optical Microscopy, AFM, SEM, TEM, Upright Fluorescence Microscope), X-Ray Diffraction (Powder), Dynamic Light Scattering, Rheometer, Lyophilizer, Multi-Channel pH Meter, Polarimeter.
- **Software Proficiency:** ACD NMR Manager, Origin, ChemDraw, Adobe Illustrator and Corel Draw.

### **Leadership Skills:**

- Member of lab safety committee in the institute of CNMS, Jain University to take care for smooth lab functioning with zero tolerance, and waste management.
- Assigned as a lab-representative for three years by safety committee in department of chemistry, IIT Indore, to take care for smooth lab work with zero tolerance, lab cleaning and waste management.
- As a senior researcher in the new and growing institute, I had been involved in the installation of many instruments (LC-MS, CD, AFM, HPLC, FT-IR, Polarimeter, Rheology, optical microscope and Lyophilizer) in IIT Indore.
- Directly involved with Ph.D supervisor to purchase some research equipment such as rotavapor, chillers, sonicators, refrigerators, incubators, optical microscopes and others.

### **CV (Dr. Indrajit Maity)**

- Played a major role in the construction of a new research lab of Dr. Apurba K. Das (Ph.D Supervisor) for enzymatic reactions and self-assembly studies in DAVV-IET campus.

**Languages:** Bengali (Mother tongue), Hindi (Advanced), English (Fluent)