CURRICULUM VITAE

DR. SUMAN DEBNATH

Ph.D. in the Field of Polymer Science

Department of Basic Sciences & Humanities

Rajiv Gandhi Institute of Petroleum Technology (An Institution of National Importance, under the Ministry of Petroleum and Natural Gas, Government of India), Jais (Amethi), U.P., India

Phone No. (+91)-8009329567 (M)

Email: debnath.suman295@gmail.com, sdebnath@rgipt.ac.in

Website:
https://sites.google.com/s/1WAoWK3A6rO5D1sOjHE2RTq7680QsRaxg/p/1AC8xoBbjcJK-ulO0NsgYD9chXqHd5WO_/edit

Motivation: I am an enthusiastic, versatile and fast-learning person with a broad and acute interest in the discovery of new innovative materials. I predominantly enjoy working together with researchers from different discipline to develop new skills and solve new challenges.

Qualification:

- Doctor of Philosophy (Ph.D.) in **Chemistry** (CGPA 8.20), 2021 (Rajiv Gandhi Institute of Petroleum Technology, an Institution of National Importance, Government of India).
- M.Sc in Chemistry (Organic Specialization), 2013 from Visva-Bharati (Central University), Government of India.
- B.Sc in Chemistry (Honours), 2011 from the University of Burdwan, West Bengal, India.

Academic Entrance Test Qualified:

WBJEE 2008, IIT JAM Entrance Test 2011, Visva-Bharati JRF Entrance Test (VBRET) 2014, S.N. BOSE JRF Entrance Test 2014, Ph.D. Entrance Test Rajiv Gandhi Institute of Petroleum Technology.

Teaching Experience:

- I have taught class 11^{th}, 12^{th} and B.Sc. chemistry since 3 years.
- Teaching Assistantship, Examination Invigilation Duty at Rajiv Gandhi Institute of Petroleum Technology, 4 Year: 2017-2020 (Department of Basic Sciences and Humanities). **Courses:** 1. Advanced Organic Synthesis, 2. Introduction to Polymer, 3.

Natural Gas Processing, 4. Introduction to Petroleum Refining & Gas Processing, 5. Introduction to Petroleum Production Engineering.

Research Interest:

- ✓ Reversible, degradable, reprocessable, reusable, shape memorable and self helable bio based dynamic polymeric network synthesis and its various applications.
- ✓ Synthesis of organic reaction based polymer materials by different polymerization techniques (ATRP, RAFT, and Living Polymerization).
- ✓ Synthesis of dynamic, self -healable, degradable, moldable polyamide-based 3D printing materials.
- ✓ Hydrogels, Organogels, Hydrogel-Organogel hybrid material synthesis and its various applications (actuator, anisotropic behavior and shape memory behaviour, biological activities, low-temperature applications, and separations of aromatics from the azeotropic mixture, adhesives properties, etc.)
- ✓ Synthesis of polyelectrolyte complexes in additive manufacture, electro spinning, spin coating, sensing, and etc. applications.
- ✓ Different Organic synthesis.
- ✓ Homogeneous, Heterogeneous Catalysis & its various applications in biofuel.
- ✓ Uranium and associated water quality parameter determination.

Research Experience:

- ❖ **M.Sc. Project Work:** Oxidation of Benzene to Phenol using chromium based nano catalyst at **Visva-Bharati** Under the guidance of Prof. Alakananda Hazra since **1 year (2012-2013)**.
- ❖ **Summer Project:** Nano metal catalyzed organic reactions at **Visva-Bharati** Under the guidance of Prof. Alakananda Hazra since **3 months (May 2014-July 2014)**.
- ❖ **Project Assistant Level-II:** Research experience in **CSIR-Indian Institute of Petroleum**, Mohkampur, Dehradun, Uttarakhand as a Project Assistant level-II in Refining Technology Division (R.T. D) under the guidance of Dr. N. Viswanadham (Principal Scientist) from **1st October 2014** to **31st August 2016 (23 months).**
- ❖ **Junior Research Fellow:** Junior Research Fellow at **Rajiv Gandhi Institute of Petroleum Technology** (An Institution of National Importance) since **September 2016 to January 2017 (5 months)** under guidance of Dr. Umaprasana Ojha in DAE.

Publications in Peer Reviewed Journal:

1. Ester Based Dynamic Self-helable, remoldable, and Shape memorable Organogels for actuator, anisotropic behavior **Suman Debnath**, Chandan Upadhay, Umaprasana Ojha* (Manuscript under preparation, **2021**).

2. Dynamic polyamides with tailored curing times for real time 3D printing application **Suman Debnath**, Umaprasana Ojha* (Manuscript under preparation, **2021**).
3. Dynamic Carboxylate Linkage Based Reprocessable and Self-Healable Segmented Polyurethane Vitrimers Displaying Creep Resistance Behavior and Triple Shape Memory Ability **Suman Debnath**, Saurabh Kr Tiwary, Umaprasana Ojha* **ACS Appl. Polym. Mater.** 2021, 3, 2166-2177 (**Most Read Article April, 2021**).
4. Solvent Processable and Recyclable Covalent Adaptive Organogels Based on Dynamic Trans-Esterification Chemistry: Separation of Toluene from Azeotropic Mixtures **Suman Debnath**, Swaraj Kaushal, Subhankar Mandal, Umaprasana Ojha* **Polymer Chemistry**, 2020, 11, 1471-1480 (**Invited article and published as cover art**).
5. Catalyst-Free Partially Bio-Based Polyester Vitrimers **Suman Debnath**, Swaraj Kaushal, Umaprasana Ojha* **ACS Appl. Polym. Mater.** 2020, 2, 1006-1013 (**Most read article in February 2020**).
6. Self-Healable and Recyclable Dynamic Covalent Networks Based on Room Temperature Exchangeable Hydrazide Michael Adduct Linkages **Suman Debnath**, Rewati Raman Ujjwal, and Umaprasana Ojha* **Macromolecules** 2018, 51, 9961−9973 (**Most read Article 2018**).
7. Dye Labelled Polyacryloyl Hydrazide−Ag Nanoparticle Fluorescent Probe for Ultra-sensitive and Selective Detection of Au Ion Rewati Raman Ujjwal, Chandan Sona, **Suman Debnath**, Prem Narayan Yadav, Umaprasana Ojha* ***ACS Omega***, 2017, *2*, 4278−4286.
8. Facile synthesis of crystalline nano porous $Mg_3(PO_4)_2$ and its application to aerobic oxidation of alcohols. **Suman Debnath**, Sandeep K. Saxena, Nagabhatla Viswanadham*, **Catalysis Communications** 2016, 84, 129-133.
9. Carbonized glycerol nanotubes as efficient catalysts for biofuel production. Nagabhatla Viswanadham*, **Suman Debnath**, Sandeep K. Saxena, Ala's H. Al-Muhtaseb, **RSC Advances**, 2016, 6, 41364-41368.
10. Nano porous hydroxyapatite as a bi-functional catalyst for bio-fuel production. Nagabhatla Viswanadham*, **Suman Debnath**, Peta Sreenivasulu, Devaki Nandan, Sandeep K. Saxena, Ala's H. Al-Muhtaseb, **RSC Advances**, 2015, 5, 67380-67383.

Conference Publications:

1. Spatial distribution of uranium and associated water quality parameters in Sultanpur district of Uttar Pradesh, **Suman Debnath**, Umaprasana Ojha*, R. M. Tripathi, S.K. Sahoo, Proceeding of Twentieth National Symposium on Environment, (NSE-20) IIT Gandhinagar, Gujarat, Dec 13-15, 2018, page 407.
2. Spatial distribution of uranium and associated water quality parameters in Pratapgarh district of Uttar Pradesh Niharika Pandey, **Suman Debnath**, Umaprasana Ojha*, R. M. Tripathi, S.K. Sahoo, Proceeding of Twentieth National Symposium on Environment, (NSE-20) IIT Gandhinagar, Gujarat, Dec 13-15, 2018, page 441.
3. Spatial distribution of uranium and associated water quality parameters in Faizabad district of Uttar Pradesh Subhankar Mandal, **Suman Debnath**, Umaprasana Ojha*, R. M. Tripathi, S.K. Sahoo, Proceeding of Twentieth National Symposium on Environment, (NSE-20) IIT Gandhinagar, Gujarat, Dec 13-15, 2018, page 403.

Conferences/ Workshop Presentations:

1. Dynamic polyamides with tailored curing times for real time 3D printing application **Suman Debnath**, Umaprasana Ojha*, ACS Meetings & Expositions, April 5-30, 2021.
2. Solvent Processable and Recyclable Covalent Adaptive Networks Based on Dynamic Trans-esterification of β-keto Esters **Suman Debnath**, Swaraj Kausal, Subhankar Mandal, Umaprasana Ojha*, Rajiv Gandhi Institute of Petroleum Technology (National Symposium October 31-November 1, 2019).
3. Self-Healable and Recyclable Dynamic Covalent Networks Based on Room Temperature Exchangeable Hydrazide Michael Adduct Linkages **Suman Debnath**, Umaprasana Ojha*, Rajiv Gandhi Institute of Petroleum Technology (National Symposium April 13, 2019).
4. Spatial distribution of uranium and associated water quality parameters in Sultanpur district of Uttar Pradesh **Suman Debnath**, Umaprasana Ojha*, R. M. Tripathi, S.K. Sahoo Dec 13-15, 2018, NSE-20, IIT Gandhinagar & Bhabha Atomic Research centre (BARC), IIT Gandhinagar, Gujarat.
5. Dye-Labeled Polyacryloyl Hydrazide−Ag Nanoparticle Fluorescent Probe for Ultrasensitive and Selective Detection of Au Ion **Suman Debnath**, R. R. Ujjwal & Umaprasana Ojha* Nov 1, 2018, Expanding Frontiers in Chemical Sciences -2018, Indian Academy of Science & ACS Publications, Banaras Hindu University, Banaras.

6. Statistical Analysis of data generated under National Uranium Project, **Suman Debnath**, Umaprasana Ojha*Sept. 26 - 27, 2018, Bhabha Atomic Research Centre (BARC), Mumbai.
7. Dynamic Polyamides with Tailored Curing Times for Real Time 3D Printing Application **Suman Debnath**, Umaprasana Ojha*, Rajiv Gandhi Institute of Petroleum Technology (National Symposium March 17-18, 2018).
8. Generation of National database on Uranium in drinking water under National Uranium Project, **Suman Debnath**, Umaprasana Ojha* Feb. 8-10, 2017, Bhabha Atomic Research Centre (BARC), Mumbai.
9. Recyclable Thermosets based on dynamic Amidation and Aza-Michael addition reaction, **Suman Debnath**, Umaprasana Ojha* Rajiv Gandhi Institute of Petroleum Technology (National Symposium January 4, 2017).
10. Carbonized glycerol nanotubes as efficient catalysts for biofuel production. **Suman Debnath**, Sandeep K. Saxenaa, Amit Sharma, Rajeev Panwar, Nagabhatla Viswanadham*, April 29, 2016, Indian Scenario, Department of Chemistry Uttaranchal University, Dehradun.

Awards/Fellowships:

- Senior Research Fellowship (SRF) award in 2019 from Human Resource Development Group, Council of Scientific & Industrial Research Government of India.
- Best Oral Presentation Award, Rajiv Gandhi Institute of Petroleum Technology (National Symposium 2019).
- Best Oral Presentation Award, Rajiv Gandhi Institute of Petroleum Technology (National Symposium 2018).
- Junior Research Fellowship from Bhabha Atomic Research Centre (BARC), Mumbai, 2016-2018.
- Junior Research Fellowship from CSIR Indian Institute of Petroleum, Dehradun, 2014-2016.
- Best Poster Award in National Symposium on Biofuel: Indian Scenario 2016 at Department of Chemistry Uttaranchal University, Dehradun, Uttarakhand.
- National Scholarship, West Bengal Board of Education, during 2006-2008 & 2011-2013.

Research Interest:

- ✓ Polymer synthesis and its application
- ✓ Material Science
- ✓ Organic Synthesis
- ✓ Homogeneous, Heterogeneous Catalysis & its various applications
- ✓ Simple organic reaction based dynamic covalent networks
- ✓ Hydrogels, Organ gels, 3D printing materials, Polyelectrolyte complexes

Skills:

Laboratory & Instruments Expertise:

1. Dynamic Mechanical Analyzer (DMA)
2. Universal Testing Machine (UTM)
3. Gel Permeation chromatography (GPC)
4. Thermo gravimetric Analysis (TGA)
5. Differential Scanning Calorimeter (DSC) Instrument
6. High-performance liquid chromatography (HPLC)
7. UV-Vis Spectrometer
8. Fluorescence Spectrophotometer
9. Rheometer
10. FTIR spectrometer
11. Parr Reactor
12. Gas chromatography
13. High Presser Micro Reactor
14. Pilot Plant
15. Nuclear Magnetic Resonance (NMR) Spectrometer
16. X-ray photoelectron spectrometer (XPS)
17. Chemisorption Unit (TPD&TPR)
18. Uranium Testing Analyzer-Fluorimeter
19. Water Testing Analyzer & Kit
20. Fluoride Meter

Computer:

DOS, Windows7, Windows8, Windows 8.1etc.

Software for Theoretical Work: Gaussian 09 software for density functional theory (DFT).

Software for Research Purposes: MS-Office, MS-Power Point, Photoshop, VSDC Video editor, Chem Draw, Avantage Software (XPS Analysis), Delta & MestReNova (NMR analysis software), Origin, and Software related to all instruments.

Name	**SUMAN DEBNATH**
Father's Name	**MANOJ DEBNATH**
Date of Birth	**08/04/1991**
Nationality	**Indian**
Religion	**Hinduism**
Category	**OBC**
Sex	**Male**
Language Known	**Bengali, English, Hindi**
Marital Status	**Married**

Extra –Curricular Activities:

- Creative thinking & Writings
- Photography
- Recitation, quiz, debate and anchoring
- Cricket, football.

Strength of my Profile:

Honest, responsible, punctual, committed to work, sincere, adjustable to any given condition, cooperative, efficient in group work, leading personality. I have a strong work ethic and committed to the highest levels of professional and personal excellence.

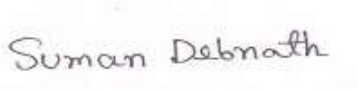
Contact Information:

Present Address: Polymer Material Lab, Rajiv Gandhi Institute of Petroleum Technology, Jais, Amethi, Uttar Pradesh, India, 229304.

Permanent Address: Village - Selalpur, Post office- Arandi, Dist-Hooghly, West Bengal, India, 712413.

Declaration & Signature:

I hereby declare that the all above written particulars are true to the best of my knowledge.



(Signature)

Suman Debnath

The following experts may be contacted for references:

1. Dr. Umaprasana Ojha (Ph.D. Supervisor)

Associate Professor
Department of Chemistry, AB-2, 510
Rajiv Gandhi Institute of Petroleum Technology, Jais, U.P.-229304, India
E-mail: uojha@rgipt.ac.in, Phone No.: (+91)-9451959597 (M)
Web: https://sites.google.com/view/polymer-materials-lab-rgipt/home

2. Dr. Nagabhatla Viswanadham

Professor, AcSIR-IIP
Senior Principal Scientist & Head of Area
CSIR-Indian Institute of Petroleum
Dehradun, Uttaranchal
E Mail: nvish@iip.res.in
Telphone No: +91 – 135 – 2525856
Cell No: +91 – 9760166857
Researcher ID: H-6844-20153.

3. Dr. Rajram Bal

Senior Scientist
Conversion & Catalysis Division
CSIR-Indian Institute of Petroleum
Dehradun, Uttaranchal
Phone (office): 0135-2525917
Phone (mobile):09358877239
E-mail: raja@iip.res.in

4. Dr. Arshad Aijaz

Assistant Professor
Department of Chemistry, AB-2, 501
Rajiv Gandhi Institute of Petroleum Technology, Jais, U.P.-229304, India
Email: aaijaz@rgipt.ac.in
Contact No. +91-7081341241