

1. Name in Full : DR. RAJU OJAH

2. Address for Correspondence: Associate Professor

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- 3. Date of birth: 01 -03- 1973
- 4. Nationality: Indian
- 5. Married / Single: Married
- 6. Male /<del>Female</del>: Male
- 7. Blood Group: 'O' +ve
- 8. Educational / Professional Qualifications

Certificate/Degree	College Univ./Institute	Year
Graduate	Darrang college, Gauhati	1993
	University	
Post Graduate	Cotton college, Gauhati	1996
	University	
Ph.D	Tezpur University, Tezpur	2006

- 9. Present Occupation: Associate Professor
- 10. Subject in Master Degree: Chemistry
- 11. Subject in Ph. D. Degree: Polymer Science
- 12. Area of Specializations: Organic Chemistry
- 13. Teaching Experience in years
  - (a) Under Graduate Level: 17 Years
  - (b) Post Graduate Level: Guest faculty in Rajib Gandhi University, Itanagar, India.
- 14. Research Experience: Pre Doctoral 7 years and Post Doctoral 8 years

# (A) Research experience

### **Exposure to Research**

Joined as a Research Scholar in the department of Chemical Sciences, Tezpur University (under UGC, FIP deputation) in the research titled 'A study of photopolymerization of vinyl monomers and their graft copolymerization onto silk', under the guidance of Prof. Swapan Kr. Dolui, Tezpur University.

## Ph.D work

Methyl methacrylate (MMA) has been chosen from wide variety of vinyl monomer for photopolymerization. Similarly, CdS is selected among the different semiconductors. The semiconductor photo catalyst has been used for photopolymerization of MMA in sunlight as well as in mercury vapour lamp. The efficiency of semiconductor has been observed in different conditions. Besides these, the semiconductor as photo catalyst has been used in graft copolymerization of *Bombyx mori* (one type of silk).

#### **Post – Doctoral work**

The project titled as "Development of amphiphilic core-shell polymer and their application towards synthesis of nanotubes, microrods and microfibers" was implemented for synthesis of amphiphilic core-shell polymer and their applications. This work was emphasized on the employment of semiconductor based photocatalyst and subsequent characterization of grafted products. The involved on the synthesis & stabilization of colloidal CdS in various methods which subsequently applied as photocatalyst in development of amphiphilic core-shell polymer.

#### Sophisticated Instrument handled

- 1. UV-Visible spectrophotometer (Hitachi)
- 2. FTIR (Nicolet)
- 3. Spectrofluorimeter (Spex Fluoromax)
- 4. Electron Paramagnetic Resonance spectrometer (Bruker EMX)
- 5. Universal Testing Machine (Zwick)
- **(B)** Research Projects carried out

Title	Year	Sponsored	Status	Cost
				Rs.(Lakh)
1. Chemical modification of Silk	2007	UGC, NERO	Sanctioned	0.70
2. Development of amphiphilic core-shell	2009	UGC, New	Completed	3.0
polymer and their application towards		Delhi,		
synthesis of nanotubes, microrods and		Post Doctoral		
microfibers		Research		
		Award, UGC		
		(2009)		

Research Awards:

i) Faculty Improvement Programme, UGC (2004)

ii) Post Doctoral Research Award, UGC (2009)

## (C) Patents: Nil

## (D) **Publication**

### Journal

 Photopolymerization of methyl methacrylate using dye-sensitized semiconductor based photocatalyst. Raju Ojah and S. K. Dolui. J. Photochem. Photobiol. A: Chem., 2005; 172, 121. ISSN 1010-6030.

- Graft copolymerization of methyl methacrylate onto Bombyx mori initiated by semiconductorbased photocatalyst. Raju Ojah and S. K. Dolui. Bioresource Technology, 2006; 97, 1529. ISSN 0960-8524.
- Solar radiation induced polymerization of methyl methacrylate in presence of semiconductor based photocatalyst. Raju Ojah and S. K. Dolui. Solar Energy Materials & Solar Cells, 2006; 90, 1615. ISSN 0927-0248.
- 4. *Graft copolymerization of vinyl monomers through CdS onto silk fibre*. Journal of Applied Polymer Science, 2007; 105 (4), 2164. ISSN 0021-8995.
- Effects of Additives on Semiconductor-Based Catalyst in Photopolymerization of Methyl methacrylate. Raju Ojah and S. K. Dolui. Journal of Polymer Mater, 2009, 28 (1), 1. ISSN 0091-8995.

#### Proceedings

- Photochemical conversion of methyl methacrylate monomer to polymethyl methacrylate. R. Ojah and S. K. Dolui, in proceedings of International Conferences on Polymer Characterization. Polychar-8, 2000; University of North Texas, USA.
- Photopolymerization of methyl methacrylate using semiconductor-based photocatalyst. R. Ojah and S. K. Dolui, in proceedings of National Workshop on Catalysis, CATWORK, 2002; Gauhati University, Assam, India.
- Graft copolymerization of methyl methacrylate onto Bombyx mori initiated by semiconductorbased photocatalyst. R. Ojah and S. K. Dolui, in proceedings of National Conference on High Performance Polymer and Its applications, 2002; Jadavpur University, Kolkata, India.
- 4. *Photopolymerization of methyl methacrylate*. R. Ojah and S. K. Dolui, in proceedings of National Symposium in Chemistry, 2002; National Chemical Laboratory, Pune, India.
- Improvement of silk by graft copolymerization technique. R. Ojah and S. K. Dolui, in proceedings of National Workshop on Science and Technology for Regional Development: Case for North East India, 2004; IIT, Guwahati, Assam, India.
- Effect of additives on semiconductor-based photocatalyst in photopolymerization of methyl methacrylate. R. Ojah and S. K. Dolui, in proceedings of National Seminar on Current Trends in Chemical Research, 2005; Chaiduar College, Assam, India.
- Effect of additives on semiconductor-based photopolymerization. R. Ojah and S. K. Dolui, in proceedings of International Seminar on Frontier in Polymer Science and Technology (Poly-2007). Guwahati, Assam, India.

#### Book

- 1. Babaharik Bigyan (For High School level)
- 2. Numerical Problems in Chemistry: A new Approach; A book for H.S. (Science Students).
- 3. The Mathematic of Chemistry (ISBN: 978-93-272-1705-6)
- 4. Chemistry for Polytechnic (First Semester) (ISBN: 978-93-272-2453-5)
- 5. Chemistry for Polytechnic (Second Semester) (ISBN: 978-93-272-3685-9)
- 6. Uchhartar Madhyamik Rochayan (H.S. First Year) (ISBN: 978-81-920160-3-0)
- 7. Uchhartar Madhyamik Rochayan (H.S. Second Year) (ISBN: 978-93-82384-07-6)

- 8. Uchhartar Madhyamik Babaharik Rochyan Bigyan (H.S. First Year) (ISBN: 978-93-272-3045-1)
- 9. Uchhartar Madhyamik Babaharik Rochyan Bigyan (H.S. Second Year) (ISBN: 978-93-272-2468-9)
- 10. Practical Chemistry (H.S. Second Year) (ISBN: 978-93-272-3038-3)
- 11. Practical Chemistry (ASTU, DU) (ISBN: 978-93-272-4093-1)
- 12. Undergraduate Practical Chemistry (GU) (ISBN: 978-93-82384-65-6)
- 13. Engineering Chemistry (In Press) (As per syllabus of ASTU), Vol 1 & 2.

### **General Sciences Magazine**

- 1. Vol. 2nd 2004; Bigyan Jouti (A bi-monthly Assamese Science magazine)
- 2. Vol 5<sup>th</sup> 2005; Bigyan Jouti.
- 3. Vol 1st 2007; Bigyan Jouti

## **Popular Articles in Journals**

- Investigatory Projects for Undergraduate Students. Chemical Education, Vol 22, No. 1 & 2, Jan-June 2013 (ISSN 0971-7489).
- Raise your voice, not the sea levels. Chemical Education, Vol 23, No. 1, Jan-June 2014 (ISSN 0971-7489).
- 3. Chemistry of fireworks. Chemical Education, Vol 23, No. 2, July-Dec 2014 (ISSN 0971-7489).
- Fifty Great Scientists & Mathematicians (2014). Edited book by Publication Cell, Jagiroad College, Assam (ISBN: 978-93-5087-586-5).

(E) Guide of any University: Guided an M. Phil (Chemistry) student of Peryier University, Salem, TN (2009).