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Present Position: Assistant Professor, Department of Chemical Engineering, National Institute of Technology, Karnataka, Surathkal, 575025, India.
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Research Interests: Nano materials, Polymer nanocomposites, Sonochemistry, Process Intensification, Biodegradable polymer, Polymer coating, Semiconductor device processing: Chemical mechanical polishing (CMP), Post CMP cleaning.

Google scholar link: https://scholar.google.co.in/citations?user=CEmK7_0AAAAJ&hl=en
Orcid: https://orcid.org/0000-0002-2583-5480

Professional Experiences	Teaching: 1 Year 07 Month (Post Ph.D.)	Postdoctoral Research: 02 Year 00 Month (Post Ph.D.)	Industry: 02 Year 07 Months (Pre-Ph.D.)	**Total:** 06 Years 02 Months

Academic Record

Degree / Examination	Name of Degree / Examination	University, Institute or Board	Year of Passing	Marks or CGPA	Subjects Studied or Discipline
X Class	10th	Uttar Pradesh Board	2000	64.33%	Hindi, English, Mathematics, Social Science, Science, Sanskrit
XII Class	12th	Uttar Pradesh Board	2002	70.53%	Hindi, English, Chemistry, Mathematics, Physics,
Diploma	Diploma in Chemical Technology	Sant Longowal Institute of Engineering and Technology, Longowal, Punjab	2006	79.62%	Chemical Engineering
Bachelors	Bachelor in Chemical Engineering	Thapar University, Patiala, Punjab, India	2009	7.46	Chemical Engineering
Doctoral	Ph.D. *(Conversion of M. Tech. into Ph.D.)*	Indian Institute of Technology Guwahati, Assam, India	2017	8.59	Chemical Engineering

Ph.D. Program in details	
Title of Ph.D. Thesis	Ultrasound Assisted Synthesis and Characterization of Poly-methyl methacrylate (PMMA) Nanocomposites
Area of Ph.D. Thesis Work	Polymer nanocomposites, Ultrasound, Nano materials Synthesis, Conductive polymers, Biodegradable polymers
Date of Joining of Ph.D. Program	25-07-2013 (I Joined IIT Guwahati in July 2012 as a M.Tech. student and after one year, converted M. Tech. into Ph.D.)
Date of Defence of Ph.D. Thesis	11-07-2017
Date of Award of Ph.D. Degree	25-06-2018
Ph.D. Thesis Supervisor	Professor Vijayanand Suryakant Moholkar, I.I.T. Guwahati

Professional Experience (5.9 years):

Employer	**Position held**	**Duration**	**Job Responsibilities**
NITK, Surathkal, India	Assistant Professor	Since October 21, 2019	• Handling Teaching and Research Activities • Handling Administrative roles
Hanyang University-Ansan, South Korea	Post-doctoral Researcher	01.01.2017 - 30.09.2019	• Independently planned and executed of research work in the field of tungsten (W) chemical mechanical polishing (CMP), Ceria cleaning, PVA brush cleaning • Assisted and guided the M.S. and Ph.D. students during their research and manuscript work
Insilco Ltd Gajraula, U.P., India	Production Engineer	04.11.2011 - 25.05.2012	• Handling and monitoring of technical issues • Manpower management with high quality production • Product development, Maintain safety at work place
Lupin Ltd Mandideep, M.P., India	Production Engineer	28.01.2010 - 29.10.2011	• Planning and management of Lisinopril production • Maintaining batch production Record, Manpower management • Maintaining safety and hygiene at workplace
IOL- CP, Barnala, Punjab - India	Production Engineer	17.08.2009 - 05.01.2010	• Monitoring the production process • Calculation of utilities cost, Preparation of process flow chart • Maintain quality production, Ensure workers health safety • Process optimization of production of acetic anhydride

Summer Internship [Total ~ 1.0 Year]

National Fertilizer Limited (N.F.L.**)** Nangal-Punjab, India	June, 2008- Dec 2008
National Fertilizer Limited (N.F.L.**)** Bathinda-Punjab, India	June, 2007- July, 2008
Associated Alcohol, Khargone-Madhya Pradesh, India.	May, 2005 - August 2005

Total Journal Publications: 17 (SCI/ SCOPUS/Web of Science)

1. **M.K Poddar,** P.K. Dikshit., Recent development in bacterial cellulose production and synthesis of cellulose based conductive polymer nanocomposites: A review paper, *Nanoselect* (2021).

2. R Narzari, **M.K Poddar**, N Bordoloi, AK Sarmah, R Kataki, A comprehensive study to understand removal efficiency for Cr $^{6+}$ using magnetic and activated biochar through response surface methodology, *Biomass convers Bior*., 1-15 (2021). https://doi.org/10.1007/s13399-021-01448-3

3. **M.K. Poddar.** P. Jalalzai, S. Sahir, N. Prasad, T. Kim, J. Park, Tungsten passivation layer (WO_3) formation mechanisms during chemical mechanical planarization in the presence of oxidizers, *Appl. Surf. Sci*. 537 (2020) 147862. https://doi.org/10.1016/j.apsusc.2020.147862.

4. J.H. Lee, **M.K. Poddar** et al., Comparative evaluation of organic contamination sources from roller and pencil type PVA brushes during the Post-CMP cleaning process, *Polymer Testing*, (2020) 106669 https://doi.org/10.1016/j.polymertesting.2020.106669

5. **M.K. Poddar**, H.Y. Ryu, N.P. Yerriboina, J.G. Park et al., Nanocatalyst-Induced Hydroxyl Radical (•OH) Slurry for Tungsten CMP for Next Generation Semiconductor Processing. *J. Mater. Sci.* 55 (8), (2020) 3450-3461 https://doi.org/10.1007/s10853.

6. K.H An, N.G. Yerriboina, **M.K. Poddar**, T.G. Kim, D. K. Lee, T. H. Jung, J.H. Lee, H.H. Lee, J.G. Park, Hybrid DHF and N_2 jet spray cleaning for silicon nitride and metal layer DRAM patterns. Microelectron. Eng., 220 (2020) 111171. https://doi.org/10.1016/j.mee.2019.111171

7. Y.A. Jeong, **M.K. Poddar**, H.Y Ryu, N.P Yerriboina, J.G Park et al., Investigation of particle agglomeration with in-situ generation of oxygen bubble during the tungsten chemical Mechanical Polishing (CMP) Process, Microelectron. Eng., 218 (2019) 111133. https://doi.org/10.1016/j.mee.2019.111133

8. J.H. Lee, **M.K Poddar**, N.P Yerriboina, HY Ryu, K.W Han, T.G Kim, S. Hamada, Y. Wada, H. Hiyama, J.G Park, Ultrasound-induced break-in method for an incoming polyvinyl acetal (PVA) brush used during post-CMP cleaning process, Polymer Testing, 78 (2019) 105962. https://doi.org/10.1016/j.polymertesting.2019.105962

9. **M.K Poddar**, K. Viswakarma, V.S Moholkar. Rheological and mechanical properties of PMMA/Organoclay nanocomposites induced by ultrasound-assisted in-situ emulsion polymerization, Korean J. Chem. Engg., 36 (2019) 828–836. DOI: 10.1007/s11814-019-0252-8

10. D. Mallick, **M.K Poddar**, M. Pinakeswar, V.S. Moholkar. Mechanistic investigations in pyrolysis kinetics of biomass blends using thermogravimetric analysis. Bioresource Technol., 261 (2018) 294–305. https://doi.org/10.1016/j.biortech.2018.04.011

11. **M.K Poddar**, M. Arjmand, U. Sundararaj, V.S Moholkar, Ultrasound-assisted synthesis and characterization of magnetite nanoparticles and poly (methyl methacrylate)/magnetite nanocomposites. Ultrason. Sonochem., 43 (2018) 38-51.https://doi.org/10.1016/j.ultsonch.2017.12.035

12. **M.K Poddar**, M. Arjmand, U. Sundararaj, S. Pradhan, V.S. Moholkar. Ultrasound–assisted synthesis and characterization of polymethyl methacrylate/reduced graphene oxide nanocomposites, AIChE J., 64 (2018) 673–687. https://doi.org/10.1002/aic.15936

13. S. Pradhan, A.J Borah, **M.K Poddar**, P.K Dikshit, L. Rohidas, V.S Moholkar, Microbial production ultrasound-assisted extraction and characterization of biopolymer polyhydroxybutyrate (PHB) from terrestrial (P. hysterophorus) and aquatic (E. crassipes) invasive weeds. Bioresource Technol., 242 (2017) 304–310. https://doi.org/10.1016/j.biortech.2017.03.117

14. **M.K Poddar**, S. Sharma, V.S Moholkar, Enhancement of thermal and mechanical properties of poly (MMA–co–BA)/Cloisite 30B nanocomposites by ultrasound–assisted in–situ emulsion polymerization, Ultrason. Sonochem., 36 (2017) 212–225. https://doi.org/10.1016/j.ultsonch.2016.11.029

15. **M.K Poddar**, S. Sharma, S. Pattipaka, D. Pamu, V.S Moholkar. Ultrasound-assisted synthesis of poly (MMA–co–BA)/ZnO nanocomposites with enhanced physical properties Ultrason. Sonochem., 39 (2017) 782–791. https://doi.org/10.1016/j.ultsonch.2017.05.040

16. **M.K Poddar**, S. Sharma, V.S Moholkar. Investigations in two-step ultrasonic synthesis of PMMA/ZnO nanocomposites by in–situ emulsion polymerization. Polymer, 99 (2016) 453–469. https://doi.org/10.1016/j.polymer.2016.07.052

17. **M.K. Poddar**, S. Sharma, V.S Moholkar, Sonochemical synthesis of PMMA/Cloisite 30B nanocomposites: A mechanistic investigation. Macromol. Symp., 361 (2016) 82–100. https://doi.org/10.1002/masy.201500009

***(ii)* Journals Published during Postdoctoral Research work** *[06 published + 1 under drafting]*

Conferences/Workshops/Seminars Attended

1. MK Poddar, S Sharma VS Moholkar, Sonochemical synthesis of PMMA/Cloisite 30B nanocomposites: International conference on polymer processing and characterization (ICPPC-2014), Oct., 11-13, 2014, Kottayam, India.

2. MK Poddar, VS Moholkar, Mechanistic investigation and statistical optimization of ultrasound assisted synthesis of PMMA/Cloisite 30B nanocomposites, ASP-15, 21-22 Jan., 2015, Indian Institute of Technology Guwahati, India.

3. MK Poddar, VS Moholkar Synthesis of surfactants free PMMA/Cloisite 30B nanocomposites with ultrasound-assisted in-situ emulsion polymerization, CHEMCON (2015), 27- 30 Dec., Indian Institute of Technology Guwahati, India.

4. S. Pradhan, MK, Poddar, VS Moholkar, Synthesis and characterization of a biodegradable polymer polyhydroxybutacrylate Reflux- 2016, Indian Institute of Technology Guwahati, India

5. MK Poddar, HY Ryu, JG Park et al. Nanocatalyst induced hydroxyl radical (•OH) for tungsten (W) in chemical mechanical polishing, ICPT- 2018, Seoul, South Korea.

6. YA. Jeong, HY. Ryu, MK Poddar, JG Park et al., A Novel Method to evaluate the catalyst effect on the performance of W CMP Process, ICPT- 2018, Seoul, South Korea.

7. MK Poddar, HY Ryu, JG Park et al., Investigation of the Formation of WOx during W chemical mechanical planarization (CMP) ICPT- 2019, Hsinchu, Taiwan.

8. YA. Jeong, HY. Ryu, MK Poddar, JG Park et al., Gas bubble induced particle agglomeration during Tungsten (W) CMP process, ICPT- 2019, Hsinchu, Taiwan.

Teaching and laboratories courses handled

1. Chemical Process Calculation, Core subject, B. Tech. (Chemical Engineering)
2. Risk and Safety Management in Process Industries, Elective, M. Tech. (Chemical, IBT & EST)
3. Polymerization Reaction Engineering, Elective subject, B. Tech. & M. Tech. (Chemical Engineering)
4. Particulate Technology (Laboratory), Core subject, B. Tech. (Chemical Engineering)

Awards and Recognition

1. National Technology Award for Technology Innovation from Department of Chemical and Petrochemicals, Ministry of Chemicals & Fertilizers Govt. of India, 2016.
2. Best paper presentation award, Reflux-2016 at I.I.T. Guwahati, India.
3. Silver medalist in Diploma at S.L.I.E.T. Longowal, India.
4. Awarded consolation prize for reciting poem during Hindi Diwas- 2016 at I.I.T. Guwahati.

References:

Name	Professor V. S. Moholkar	Professor Pallab Ghosh	Professor G. Pugazhenthi
Position	Full Professor	Full Professor	Full Professor
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I hereby declare that all entries in this form are true to the best of my knowledge and belief.

Maneesh Kumar Poddar, Ph.D.

12.05. 2021.