

1. Name and Academic Rank:

A. S. Mohammad Sayem Mozumder

Assistant Professor- Full time

2. Degrees with fields, institution and date:

Ph.D. Chemical Engineering, University of Western Ontario, London, Ontario, Canada, 2010

M.Sc. Chemical Engineering, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia, 2004

B.Sc. Chemical Engineering, Bangladesh University of Engineering & Technology, Dhaka, Bangladesh, 2000

3. Years of Service on UAEU, Chemical & Petroleum Engineering Department.

Years of service at UAEU: 3

Date of Original Appointment: August, 2011

4. Other related experiences-teaching, industrial, etc:

- Guest Researcher, Department of Chemical Engineering, Kagoshima University, Kagoshima, Japan. July 2014 – August 2014(Funded by JPI-JCCP)
- Visiting Researcher, Department of Chemical and Biochemical Engineering, University of Western Ontario (UWO), London, Ontario, Canada. July 2012 – August 2012
- Post-doctoral Research Fellow, Schulich School of Medicine & Dentistry and Chemical & Biochemical Engineering, University of Western Ontario, London, Ontario, Canada. May 2010-August 2011
- Visiting Researcher, National Research Council (NRC), London, Ontario, Canada. February 2006 – February 2010
- Research Assistant, Schulich School of Medicine & Dentistry, University of Western Ontario, London, Ontario, Canada. July 2009 – April 2010
- Research Assistant, Department of Chemical and Biochemical Engineering, University of Western Ontario (UWO), London, Ontario, Canada. September 2005 – April 2010
- Teaching Assistant, Department of Chemical and Biochemical Engineering, University of Western Ontario (UWO), London, Ontario, Canada. September 2005 – April 2010
- Lecturer B, Department of Chemical Engineering, King Fahd University of Petroleum & Minerals, Dhahran 31261, Saudi Arabia. Dec. 2004 – April 2005
- Research & Teaching Assistant, Department of Chemical Engineering, King Fahd University of Petroleum & Minerals, Dhahran 31261, Saudi Arabia. Sept. 2002 – Dec. 2004
- Trainer, PhD, Masters and Summer students, University of Western Ontario (UWO), London, Ontario, Canada. May 2009 – August 2011
- Industrial Collaboration, DENTSPLY Tulsa Dental Specialties, Tulsa, OK 74135, USA. February 2011- August 2011
- Industrial Training, Karnaphuli Fertilizer Company (KAFCO) Ltd., Chittagong, Bangladesh. October 1998

5. Patents and Publications:

Patents and Publications:

Book chapter:

1. Mozumder, M.S., Mourad, A.-H.I., Perinpanayagam, H., Zhu, J. (2014) Nano-TiO₂-enriched biocompatible polymeric powder coatings: Adhesion, thermal and biological characterizations. Trans Tech Publications, Switzerland. *Submitted*

Patents:

1. Zhu, J, Perinpanayagam, H, **Mozumder, M.S**, Zhang, H, and Shi, W, "Biocompatible Polymer Nanoparticle Coating Composition and Method of Production Thereof", US Patent, 20,130,059,946, 2013
2. Zhu, J., **Mozumder, M.S**, Perinpanayagam, H, Shi, W, and Zhang, H, "Biocompatible Polymer Nanoparticle Coating Composition and Applications Thereof", Chinese Patent, Filed, 11C10062CN, April 25, 2011
3. Ferrier, S., Zhu, J., **Mozumder, M.S.**, Shi, W. and Rizkalla, A. "Treatment of Dental Hypersensitivity by Using Electrostatic Powder Coating Technology". *A Report of Invention (ROI)* has been submitted ahead of filing a Provisional US Patent.

Articles published in referred journals:

1. Mozumder, M.S., Mourad, A.-H.I., Perinpanayagam, H., Zhu, J. (2014) Nano-SiO₂ enriched biocompatible powder coatings. *Materials Today Proceedings*. *Accepted*.
2. Mozumder, M.S., Mourad, A.-H.I., Perinpanayagam, H., Zhu, J. (2014) Nano-TiO₂-enriched biocompatible polymeric powder coatings: Adhesion, thermal and biological characterizations. *Advanced Materials Research*. 995: 113-124.
3. Hashem, N., **Mozumder, M. S.**, Perinpanayagam, H. (2013) Human Mesenchymal Cell Attachment and Growth on Endodontic MTA and Titanium Implant Surfaces. *Submitted*.
4. Shi, W., **Mozumder, M.S.**, Zhu, J., and Perinpanayagam, H. (2012) MTA-enriched nanocomposite TiO₂-polymeric powder coatings support human mesenchymal cell attachment and growth. *Biomedical Materials*. 7(5): 055006. (The article has been highlighted in *Mesenchymal Cell News* 4.3)
5. **Mozumder, M.S.**, Zhu, J., Zhang, H., and Perinpanayagam, H. (2012) Titania-polymeric powder coatings with nano-topography support enhanced human mesenchymal cell responses. *Journal of Biomedical Materials Research Part A*. 100 (10): 2695-2709.
6. **Mozumder, M.S.**, Zhu, J., and Perinpanayagam, H. (2011) TiO₂-Enriched Polymeric Powder Coatings Support Mesenchymal Cell Spreading and Differentiation. *Biomedical Materials*. 6 (3):035009. (The article has been included in *Biomedical Materials* Highlights of 2011 collection among its best 11 articles published in year 2011; also included in the journal's compilation of the best papers published in the last two years (2011 & 2012))
7. **Mozumder, M.S.**, Zhang, H., and Zhu, J. (2011) Mimicking *Lotus Leaf*: Development of Micro-Nanostructured superhydrophobic powder coatings. *Macromolecular Materials & Engineering*. 296 (10):929-936.
8. **Mozumder, M.S.**, Zhu, J., and Perinpanayagam, H. (2011) Nano-TiO₂ enriched Polymeric Powder Coatings Support Human Mesenchymal Cell Attachment and Growth. *Journal of Biomaterials Applications*. 26 (2): 173-193.
9. Alnaizy, R.S, **Mozumder, M.S.**, and Abu-Sharkh, B. F. (2008) Effects of hydrophobe contents of amphiphilic polyelectrolytes on flocs size and removal efficiency of NOM from waters. *Journal of Water Supply: Research and Technology*. 57(5): 329-336.
10. **Mozumder, M.S.**, Alnaizy, R.S., Umar, Y., Ali, S.A., and Abu-Sharkh, B.F. (2005) Influence of hydrophobe content and salt concentration on dilute solution behavior of hydrophobically modified ionic polymers from diallylammonium salts/sulfur dioxide cyclocopolymerization: light scattering and fluorescence spectroscopy, *European Polymer Journal*. 41: 2224-2231.
11. Hussein, I.A., **Mozumder, M.S.**, Abu-Sharkh, B.F., Ali, S.A., and Alnaizy, R.S. (2005) Influence of hydrophobe content on the solution rheology of hydrophobically modified terpolymer of SO₂, N,N-diallyl-N-carboethoxymethylammonium chloride. *European Polymer Journal*. 41: 2472-2482.

Articles to be submitted to referred journals:

1. **Mozumder, M.S.**, Zhu, J., Zhang, H., and Ferrier, S. (2013) Flow Modification of Proprietary Ion-leachable Glass Ionomers for dental use. Ready to be submitted to *Journal of Biomedical Materials Research Part B*. (Publication delayed for the potential US patent application)
2. **Mozumder, M.S.**, Zhu, J., and Ferrier, S. (2013) Dentinal Tubule Occlusion by Flow-modified Ion-leachable Glass Ionomers as Powders. Ready to be submitted to *Journal of Dental Research*. (Publication delayed for the potential US patent application)
3. **Mozumder, M.S.**, Zhu, J., and Ferrier, S. (2013) Novel Application of Electrostatic Powder Coating to Occlude Exposed Dentinal Tubules to Treat Dentine Hypersensitivity. Ready to be submitted to *Journal of Biomedical Materials Research Part B*. (publication delayed for the potential US patent application)

International conference contributions:

1. Mozumder, M.S., Mourad, A.-H.I., Perinpanayagam, H., Zhu, J. (2014) Nano-SiO₂ enriched biocompatible powder coatings. 5th International Conference on Advanced Nanomaterials, Aveiro, Portugal 2-4 July 2014.
2. Mozumder, M.S., Mourad, A.-H.I., Perinpanayagam, H., Zhu, J. (2014) Ultrafine polymeric powder coating technique to fabricate micro/nano-scale topographic coatings for implants. Scandinavian Society for Biomaterials – 7th annual meeting iNANO, Aarhus University, Aarhus, Denmark 26 – 28 March 2014.
3. Hashem, N., **Mozumder, M.S.**, Deller-Quinn, M., and Perinpanayagam, H. (2010) Endodontic MTA materials support human mesenchymal cell attachment and differentiation. *Journal of Canadian Dental Association*. 76: a95.
4. Shugg, J., Seyedmehdi, S.A., **Mozumder, M.S.**, Zhang, H., and Zhu, J. (2009) Development of functional coatings including superhydrophobic and antimicrobial surfaces. Particle Technology Research Conference, 9-10 July 2009, London, ON, Canada.
5. Alnaizy, R.S., **Mozumder, M.S.** and Abu-Sharkh, B.F. (2005) Optimal application of amphiphilic polyelectrolytes as primary flocculants in NOM-contaminated water. **7th World Congress of Chemical Engineer (WCCE)**, 10 – 14 July 2005, Scotland.
6. Alnaizy, R.S., **Mozumder, M.S.** and Abu-Sharkh, B.F. (2005) Amphiphilic Polyelectrolytes as Primary Flocculants/Coagulants in Water Treatment: Dynamic Light Scattering Study. **World Water and Environmental Resources Congress**, Salt Lake City, Utah, June 27- July 1, 2004.

6. Scientific and professional societies:

Member, American Institute of Chemical Engineers, Saudi Arabian Session (SAS-AIChE)

7. Honors and awards:

- One of my publications is highlighted in *Mesenchymal Cell News* 4.3.
- One of my published articles has been included in *Biomedical Materials* Highlights of 2011 collection among its best 11 articles published in year 2011.
- **NSERC Visiting Fellowship (VF)**, 2011.
- **NSERC Industrial R&D Fellowship (IRDF)**, 2011.
- **Ontario Graduate Scholarship (OGS)**, 2008-2009.
- **Graduate Student Teaching Award** 2009, University of Western Ontario, Canada.
- **1st Prize**, ‘Student Video Competition’, PTRC Conference 2009, London, ON, Canada
- **Western Engineering Scholarship (WES)**, The University of Western Ontario, 2005-2010
- **Graduate Student Scholarship**, King Fahd University of Petroleum & Minerals, 2002 –2004
- **Technical Scholarship**, Bangladesh University of Engineering &Technology, (1995-2000)
- **Merit Scholarship**, Bangladesh University of Engineering &Technology (1999-2000)
- **National Award (Gold medal)** in ‘Instant Essay Writing’, Dhaka, Bangladesh, 1990.

8. Institutional and professional services in the last five years:

- Supervisor, Graduation Project I, February 2013 to till date
- Supervisor, Graduation Project I & II, February 2012 to January 2013
- Examiner, M.Sc. Thesis Defense (Ms. Bushra), June 2012
- Examiner, M.Sc. Thesis Defense (Ms. Shereen), June 2014
- Examiner, Industrial Training, 2011-2014
- Examiner, Graduation Projects, 2011-2014

- Reviewer, Particology, Since 2010
- Developer, Several undergraduate courses including Mass Transfer and Fluid Mechanics, 2011-2012
- Member, Several committees at the Department and College levels, 2011-2012
- *Vice-President, Titumir Hall (a student dorm), Bangladesh University of Engineering & Technology, Dhaka, Bangladesh (1999-2000).*
- *Member, EUCSU (Engineering University's Central Student Union), BUET, Dhaka, Bangladesh (1999-2000).*
- *General Secretary, Chemical Engineering Association, BUET, Dhaka, Bangladesh (1998-2000)*