Seyed Mehran Abtahi Foroushani

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Education

2014 – expected April 2018 — **Ph.D., Process and Environmental Engineering,**
Institut National Polytechnique, University of Toulouse, France.

- **Visiting scholar, January-August 2016**
Institute for Nanotechnology, University of Twente, the Netherlands.

- **Visiting scholar, July 2017-January 2018**
Membrane Technology Group, University of KU Leuven, Belgium

2006 - 2009 — **M.Sc., Civil-Environmental Engineering,** GPA: 18.76 / 20
University of Tehran, Iran.

2001 - 2005 — **B.Sc., Agricultural Engineering (Food industries &Technology),** GPA: 16.40 / 20
Khorasgan Branch, Islamic Azad University, Isfahan, Iran.

Doctoral Research

2014 - present
University of Toulouse

Micropollutants (MPs) removal from effluent of municipal wastewater treatment plants: Over the last few years, a great concern has been highlighted regarding the occurrence of MPs in aquatic resources and the subsequent effects on humans and the environment. In my PhD, a tertiary moving bed biofilm reactor (MBBR), filled with newly-introduced Z-carriers and bioaugmented by a selected bacteria, is under the sharp-eyed investigation to find the abiotic and biotic removal mechanisms of four MPs including Diclofenac, Naproxen, 4n-Nonylphenol and 17ß-Estradiol from secondary-treated wastewater.

January – August 2016
University of Twente

Assessment of the MPs removal using nanofiltration (NF) membranes: As a part of PhD project, the removal of target MPs was assessed using hollow-fiber NF membranes, surface-modified by layer by layer (LbL) assembly of weak polyelectrolytes. Finally, we obtained unique membranes with a great potential in MPs removal combined with low salts removal from secondary-treated wastewater. This capability would allow us to have a low-saline concentrate stream which is more favorable for biological treatment, compared to the available commercial membranes found in the market.

July 2017 – January 2018
University of KULeuven

The capability of enzymatic membrane bioreactors (EMBRs) in MPs removal: In another part of the PhD project, I am going to compare the efficiency of EMBRs in MPs removal. The membrane used in this study will be Polyelectrolyte Multilayers (PEMs)-based NF membranes. Moreover, the enzyme Laccase will be immobilized on the surface of magnetic nanoparticles placed on the surface of NF membranes.

Publications

- S. Mehran Abtahi, Maike Petermann, Agathe Juppeau Flambard, Sandra Beaufort, Fanny Terrisse, Thierry Trotouin, Claire Joannis Cassan, Claire Albasi; "Assessment of the micropollutants removal in tertiary moving bed biofilm reactors (MBBRs)." Submitted to the journal of *Science of the Total Environment*., 2017.

- S. Mehran Abtahi, Shazia Ilyas, Claire Joannis Cassan, Claire Albasi, Wiebe M. de Vos; "Micropollutant removal from secondary-treated municipal wastewater using weak polyelectrolyte multilayer based nanofiltration membranes." *Journal of Membrane Science*., 2017, Vol. 546, 139-154.

- Shazia Ilyas, S. Mehran Abtahi., Namik Akkilic, H.D.W. Roesink, Wiebe M. de Vos; "Weak polyelectrolyte multilayers as tunable separation layers for micro-pollutant removal by hollow fiber nanofiltration membranes". *Journal of Membrane Science*., 2017, Vol. 537, 220-228.

- S. Mehran Abtahi, Amin Mohammad Mehdi, Nateghi Roya, Vosoogh Ali, Dooranmahaleh Mehdi Gholizadeh; "Prediction of effluent COD concentration of UASB reactor using kinetic models of Monod, Contois, Second-Order Grau and modified Stover-Kincannon". *International Journal of Environmental Health and Engineering*., 2013, Vol. 1, Issue 8, 2-12. (DOI: 10.4103/2277-9183.110149.)

- S. Mehran Abtahi, Ali Torabian, Ali Vosoogh, Babak Jafari, Mehdi Gholizadeh Dooranmahaleh; "Comparison of the Monod and Kincannon-Stover models for kinetic evaluation in an Anaerobic Baffled Reactor (ABR)". *Environmental Sciences*., 2011, Vol. 6, No.4, 55-66.

- Torabian Ali, S. Mehran Abtahi, Amin Mohammad Mehdi, Momeni Seyyed Alireza; "Treatment of Low-Strength Industrial Wastewater Using an Anaerobic Baffled Reactor (ABR)." *Journal of Environmental Health, Science and Engineering*., 2010, Vol. 7, No. 3, 229-240.

- Torabian Ali, S. Mehran Abtahi, Amin Mohammad Mehdi, Momeni Seyyed Alireza; "Operation of an Anaerobic Baffled Reactor for Sulfate Removal of Amirkabir Industrial Estate Wastewater". *The Journal of Water and Wastewater* (in Persian language)., 2010, No.2 (74), Vol. 21, 19-26.

Presentations

- S. Mehran Abtahi, Shazia Ilyas, Claire Joannis Cassan, Claire Albasi, Wiebe M. de Vos; "Tertiary treatment of micropollutants using layer by layer-made nanofiltration membranes". International Congress on Membranes and Membrane Processes (ICOM2017), July 29th - August 5th 2017, San Francisco, California, U.S.A.

- S. Mehran Abtahi, Maike Petermann, Agathe Juppeau Flambard, Sandra Beaufort, Fanny Terrisse, Thierry Trotouin, Claire Joannis Cassan, Claire Albasi; "The assessment of bioaugmented - moving bed biofilm reactor (MBBR) in micropollutants removal". 10th Micropol & Ecohazard Conference, 17-20 September 2017, Vienna, Austria.

- S. Mehran Abtahi; "Layer by layer assembly of polyelectrolytes on the surface of Ultrafiltration membranes". 6th Scientific annual conference of the EUDIME program, 13-15 September 2017, Prague, Czech Republic.

- S. Mehran Abtahi, Omid Yazdani, Iraj Hoshyari, Ehsan Mani; "Kinetic Analysis of Sulfate Removal in an Anaerobic Baffled Reactor (ABR)."Proceedings of International Conference on Environmental Engineering and Technology (ICEET), World Academy of Science, Engineering and Technology 78, pp. 1396-1416, 2011, Amsterdam, Netherlands.

- Torabian Ali, Abtahi S. Mehran, Amin Mohammad Mehdi, Vosoogh Ali; "Comparison of Monod and Kincannon-Stover models for kinetic evaluation in an Anaerobic Baffled Reactor (ABR)". Proceedings of 2nd International Conference on Water and Wastewater Treatment (ICWWT), April 21-22, 2010, Isfahan, Iran.

Published Book

- Gholamreza Nabi Bidhendi, Ali Vosoogh, Mehdi Gholizadeh, S. Mehran Abtahi; Translation of a book named: *"Wastewater Bacteria"*, written by Gerardi Micheal H, into the Persian language; Printed by Tehran University Publications, 2011 (ISBN: 978-964-03-6213-6).

Honors and Awards

2014 The winner of the award of "EUDIME Fellowship", on behalf of the European Commission - Education, Audiovisual and Culture Executive Agency (EACEA) in 2014 (Doctoral contracts No. 2014-122).

Skills

- **Experimental**
  - Proficient in laboratorial experiments related to water and wastewater treatment.
  - Able to work with scanning electron microscope, epifluorescence microscope, confocal microscope, DNA extraction and qPCR, spectroscopic ellipsometer, reflectometer, optical density instrument, contact angle instrument, water filtration set-ups, etc.

- **Computer**
  - Engineering: BIOWIN.
  - Others: Microsoft Office, Adobe programs.

- **Language**
  - English: Full professional proficiency
  - French: At the beginning step.
  - Persian: Native

Work Experience

2010-2014 Senior expert of wastewater treatment processes,
Parsjooyab Consulting Engineering Company, Isfahan, Iran.

References

- Claire ALBASI, Professor, INP-ENSIACET, CNRS, Laboratoire de Génie Chimique, Université de Toulouse, Toulouse, France.
  Email: claire.albasi@ensiacet.fr Phone: +33 (0)6 62 17 64 65
- Wiebe DEVOS, Associate professor, Membrane Science and Technology, Faculty of Science and Technology, University of Twente, the Netherlands.
  Email: w.m.devos@utwente.nl Phone: +31 (0)6 17 39 11 86.
- Claire JOANNIS CASSAN, Assistant Professor, INP-ENSIACET, CNRS, Laboratoire de Génie Chimique, Université de Toulouse, Toulouse, France.
  Email: claire.joanniscassan@ensiacet.fr Phone: +33 (0)6 06 53 93 36.
- Ivo VANKELECOM, Professor, Membrane Technology Group, the University of KU Leuven, Leuven, Belgium.
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