Soheila Mohades, Ph.D.

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Postdoctoral Research Fellow
University of Michigan Ann Arbor, Michigan June 2017- Present

Doctor of Philosophy, Electrical Engineering
Old Dominion University Norfolk, Virginia May 2017

Master of Science, Plasma Engineering
Shahid Beheshti University Tehran, Iran February 2012

Bachelor of Science, Physics
Shahid Beheshti University Tehran, Iran July 2008

Research Experiences

Old Dominion University 2012- 2017
Plasma Engineering and Medicine Institute

- Investigating the effectiveness of plasma activated media and direct plasma treatment on the viability of cancer and normal cells and analyzing mechanisms of cell injury (apoptosis/ necrosis) DNA damages in plasma treated cells.
- Measuring reactive species generated by the plasma in a liquid using molecular probes.
- Studying physical, electrical and chemical characteristic of a single electrode atmospheric microjet ignited by nanosecond high-voltage pulses.
- Investigating cell proliferation, morphology and death rate using time-lapse imaging microscopy and immunofluorescence assays.

Shahid Beheshti University 2009 - 2012
Laser and Plasma Research Institute

- Investigated the effects of dielectric barrier discharge (DBD) plasma on the inactivation of different types of bacteria for surface sterilization.
- Assessed surface properties of a polymer treatment by plasma using contact angle test.

Publications

- **S. Mohades**, M. Laroussi, and V. Maruthmuthu, *Moderate Plasma Activated Media Suppresses Proliferation in MDCK Epithelial Cells,* Journal of Physics D: Applied Physics, 2017. **50**(18): p. 185205.
- **S. Mohades**, N. Barekzi, V. Maruthmuthu, H. Razavi, and M. Laroussi, Temporal evaluation of the anti-tumor efficiency of Plasma-Activated Media, Plasma Processes and Polymers, 2016. **13**(12): p. 1206-1211.
- **S. Mohades,** M. Laroussi, J. Sears, N. Barekzi, and H. Razavi, Evaluation of the Effects of a Plasma Activated Medium on Cancer Cells, Physics of Plasma, 2015. **22**(12): p. 122001.

Publications (Continued)

- Y. F. Yue, **S. Mohades**, M. Laroussi, and X. Lu, *Measurements of Plasma-Generated Hydroxyl and Hydrogen Peroxide Concentrations for Plasma Medicine Applications*, IEEE Transactions on Plasma Science, 2016. **44**(11): p. 2754-2758.
- M. Laroussi, **S. Mohades**, and N. Barekzi, *Killing adherent and nonadherent cancer cells with the plasma pencil.* Biointerphases, 2015. **10**(2): p. 029401.
- **S. Mohades**, N. Barekzi, and M. Laroussi, *Efficacy of Low Temperature Plasma against SCaBER Cancer Cells.* Plasma Processes and Polymers, 2014. **11**(12): p. 1150-1155.
- M. Laroussi, L. V. Way, **S. Mohades**, N. Barekzi, *Images of SCaBER Cells Treated by a Low Temperature Plasma Jet*, IEEE Transactions on Plasma Science, 2014, **42**(12): p. 2468- 2469.
- N. Navabsafa, H. Ghomi, M. Nikkhah, **S. Mohades**, H. Dabiri, S. Ghasemi, *Effect of BCD Plasma on a Bacteria Cell Membrane,* Plasma Science and Technology, 2013. **15**(7): p. 685-689.

Selected Conference Presentations and Talks

- S. Mohades, N. Barekzi, H. Razavi, M. Laroussi, *Effects of plasma activated media on the treatment of epithelial cancer cells*, The 3rd International Workshop on Plasma for Cancer Treatment (IWPCT), April 2016, Washington D.C. (poster).
- Invited talk at Department of Radiation Oncology, *Effects of low temperature plasma on epithelial cancer cells,* Virginia Commonwealth University, January 2016, Richmond, VA.
- Invited talk at Graduate seminars of ECE Department, *Efficacy of low temperature plasma against cancer cells*, Old Dominion University, April 2015, Norfolk, VA.
- S. Mohades, N. Barekzi, H. Razavi, M. Laroussi, *Evaluation of the efficacy of the plasma pencil produced PAM against cancer cells*, 67th Annual Gaseous Electronics Conference (GEC), October 2014, Raleigh, NC. (Oral).
- S. Mohades, N. Barekzi, H. Razavi, and M. Laroussi, *Effects of growth medium treated by plasma pencil on the viability of SCaBER cancer cells*, The 41st IEEE International Conference on Plasma Science (ICOPS), May 2014, Washington D.C. (Oral).
- S. Mohades, N. Barekzi, M. Laroussi, *Efficiency of the plasma pencil against SCaBER cancerous cells*, The 1st International Workshop on Plasma for Cancer Treatment (IWPCT), April 2014, Washington D.C. (Poster).
- S. Mohades, R. Jonas, N. Barekzi, M. Laroussi, *Using low temperature plasma as a method of decontamination of fruits,* 66th Annual Gaseous Electronics Conference (GEC), October 2013, Princeton, NJ. (Poster).

Research Interests

- Low temperature plasma sources
- Chemical and biomedical applications of plasma
- Bioelectronics
- Surface modifications of materials

Volunteering

Old Dominion University, Fall 2015

- A volunteer member of Grade Appeal Committee at Electrical and Computer Engineering Department.

Experimental Skills

- Independent protocol preparation, experiment design, and data analysis
- Experienced in cell culture, Immunofluorescence assays, and microbiology lab assays
- Instrumentations: UV-visible absorption spectroscopy, optical and fluorescence microscopy, ELISA, gel electrophoresis, pH meter, RT-PCR (trained)
- Proficient in laboratory electrical measurement (oscilloscope), optical emission spectroscopy (OES), fast ICCD imaging, vacuum pumps
- Developing, operating, and diagnosing low and high pressure non-thermal plasma sources
- Supervised graduate and undergraduate student in their lab projects
- Proficient in MS office and Endnote and experienced in Matlab, ImageJ, and SPSS

Honors

- Outstanding PhD Researcher of the Year Award, Electrical and Computer Engineering Department, Old Dominion University (2017).
- Engineering Dean's Graduate Fellowship Award for Excellence, Batten College of Engineering and Technology, Old Dominion University (2015-2016).
- Student Travel Award to attend Gaseous Electronics Conference (GEC), Raleigh, North Carolina (2014).

Memberships

- Student member of Institute of Electrical and Electronics Engineer (IEEE) and Women in Engineering (WIE) (2014-Present)