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Mokhtar Mapar

Educations

- 2013- Present** PhD student in *Applied Physics*
Chalmers University of Technology, Gothenburg, Sweden
- 2009-2011 M.Sc. *Nanoscale Science and Technology*
Chalmers University of Technology, Gothenburg, Sweden
Thesis: “*Optical Manipulation of Nanoparticles’ Flow through Porous Membranes*”
- 2008-2010 M.Sc. *Microtechnology*
Chalmers University of Technology, Gothenburg, Sweden
Thesis: “*A Bio-Photoconductive Sensor using Fluorescent Proteins*”
- 2007 B.Sc. *Electrical Engineering - Telecommunications*
K.N. Toosi University of Technology, Tehran, Iran
Thesis: “*Design, and Fabrication Assessment of a GPS Receiver*”

Honors and Awards

- 2010 Honored as the top student in Microtechnology Master Program, class 2010
- 2006 Awarded "Fundamentals of GSM" certificate by Mobile Communication Company of Iran
- 2003 Elected as the best presentation, MATLAB workshop, K.N. Toosi University of Technology
- 2001 Alumni of National Organization for Development of Exceptional Talents (NODET) – Iran
- 2000 Qualified in the first round of Iranian National Mathematics Olympiad
- 1999 Awarded 2nd place in the provincial study and research contest

Research Interest

- BioMEMS and NEMS
- Biosensors
- Nano devices with Bio, RF and Photonic applications
- Molecular electronics and devices

Publications

- 1) M. Mapar, A. H. Sotoudeh, M. Negahdar, “*The Optimum Value of Alpha in the Pre-specified Coverage Control Algorithm in Wireless Sensor Networks to Achieve Minimum Active Nodes*”, The 4th IEEE and IFIP International Conference in central Asia on Internet, The Next Generation of Mobile, Wireless and Optical Communications Networks (ICI 2008), Uzbekistan, September 2008.
- 2) M. Negahdar, M. Ardebilipour, M. Mapar, “*Adaptive method for decreasing over-covered areas in Wireless Sensor Networks*”, The Fourth International Conference on Wireless and Mobile Communications (ICWMC 2008), Athens, Greece, July 27 - August 1, 2008.
- 3) M. Negahdar, M. Ardebilipour, M. Mapar, “*A method for coverage control in Wireless Sensor Networks with two degrees of freedom*”, The 2nd International Conference on Electrical Engineering 2008, Pakistan, March 2008.

Research Experience

- 2009 Modeling and Optimization of a Digital Microfluidic Device using COMSOL
Bionanosystems Laboratory, Chalmers University of Technology, Gothenburg, Sweden
- 2007-2008 Coverage Control in Wireless Sensor Networks
Spread Spectrum Lab, K.N. Toosi University of Technology, Tehran, Iran

Working Experience

- 2011 – 2013 Research Engineer, Biological Physics, Chalmers University of Technology
Task: Design and fabrication of nanodevices and their microfluidic backbone for biological applications
- 2010 Summer job, Porenix AB, Gothenburg, Sweden
Task: Fabrication of nanoporous membranes by colloidal lithography and design of a pore measurement system and its LabView interface based on standards
- 2006-2007 Research Engineer, Faraconesh Co., Tehran, Iran
Task: GSM security research for Telecommunication Company of Iran

Teaching Experience

- 2008 Teacher Assistant, Circuit Synthesis and Filter
K.N. Toosi University of Technology Tehran, Iran
- 2003 Teaching MATLAB's PDE toolbox, MATLAB Workshop
K.N. Toosi University of Technology Tehran, Iran

Professional Skills and Experience

- **Cleanroom:** Colloidal Lithography, SEM, RIE, double-sided Lithography, Silicon micromachining, Sputtering, E-beam and Thermal Evaporation, Profilometry, PDMS-based Microfluidics, etc.
- **Optics:** Photoconductivity measurements, Optical trapping, Dark field microscopy, Fluorescent microscopy, Laser alignment, Plasmonic measurements.
- **Software:** COMSOL Multiphysics, MATLAB, LabVIEW, HFSS, AWR Microwave Office, Protel, and PSPICE.
- Programming language: MATLAB, C
- Designing of Edge-Coupled and End-Coupled Microstrip Microwave Filters, Low Noise Amplifiers and Power Amplifiers

Voluntary and Community Activities

- Board member of Iranian Student Association at Chalmers (ISAC), Chalmers University of Tehcnology, Gothenburg, Sweden (2013)
- Co-founder of NanotechChalmers, an educational YouTube channel on nanofabrication, Gothenburg, Sweden (2011)
- Member of Technical Organizing Committee of Nanoplasmonic Sensors and Spectroscopy Conference, Chalmers University of Technology, Gothenburg, Sweden (2011)
- Students' representative of 6 courses, Chalmers University of Technology, Gothenburg Sweden (2008-2009)
- Deputy of University of Tehran for 9th Iranian Student Conference on Electrical Engineering at K.N. Toosi University of Technology, Tehran, Iran (2006)
- Deputy of K.N. Toosi University of Technology in National Scientific Student Organization of Electrical Engineering (NSSOEE), Tehran, Iran (2003-2006)
- Chair of Publication Committee of 7th Iranian Student Conference on Electrical Engineering, K.N. Toosi University of Technology, Tehran, Iran (2004)
- Board member of Students' Scientific Society of Electrical Engineering faculty, K.N. Toosi University of Technology, Tehran, Iran (2003-2005)