Curriculum Vitae

Sabah Gaznaghi

Personal Information

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Education

- **2013 – 2016**
  Urmia University
  Master's degree in Nanotechnology – Nanophysics
  Principal Subjects Covered: Thin Film Solar Cells, Nanophysics Laboratory, Nanoparticles & Their Applications, Statistical Mechanics Economics, Modern Quantum Mechanics, Electrodynamics, Advanced Solid State Physics
  Thesis: Charge Carriers Density Effect on Efficiency of Graphene-based Dye Sensitized Solar Cells
  Average grade (16.21/20)
  This work has been supported by the Iranian Nanotechnology Initiative Council (INIC)

- **2008 – 2013**
  Bachelor's degree in Physics
  Project: Investigation water condensation by laser pulses

Courses

- **2017 – 2018**
  Program: Solar Energy Engineering (MicroMasters Program held by DelftX)
  Courses: 1. Photovoltaic Energy Conversion 2. Photovoltaic Technologies 3. Photovoltaic Systems, 4. Integration of PV Systems in Microgrids 5. Capstone
  Including: Systems design and engineering, Solar systems installation, Device fabrication and characterization, Project management and consultancy as well as (technical) sales
  Program Is Ongoing

- **2015 Sep – Dec**
  Course: Solar Energy at Delft University of Technology through edX
  Principal Subjects Covered: Solar cells, Solar thermal, PV systems, Economics
  Verified average grade: (99/100)
  (DelftX is online learning initiative of Delft University of Technology)

- **2014 Nov**
  Course: Nanotechnology Human Resources Development at Iranian Nanotechnology Initiative Council (INIC) & (ITC) in Tehran
  Principal Subjects Covered: Commercializing Technology, Entrepreneurship, Patent, Developing a Business Plan

- **2004 – 2010**
  Course: English Language at Academic Center for Education, Culture and Research (ACECR)
  Principal Subjects Covered: Speaking, Listening, Reading, Writing

Lab Experience

- **2013 – 2016**
  Nanotechnology Center, Urmia University
  Synthesizing nanoparticles via sol-gel method – Synthesizing carbon nanotubes by arch discharge and copper nanoparticles via electrochemical reduction – Designing solar cell measurement system for I-V characterization of solar cells – Using Matlab, Comsol MP, Silvaco and Virtual NanoLab (for modeling and simulation) – TEM operation

- **2013 – 2016**
  Thin Film Laboratory, Urmia University
  Coating FTO glasses via Spin Coating – Coating photoelectrodes with DC sputtering coater (Using copper as a target) – Measuring roughness & thickness of samples with 3D confocal microscope – Set up Hall AC measurement system for photoelectrodes – Designing sample mounting boards for samples with different dimensions

- **2011 Spring**
  Electronics Laboratory
  Design different Filters, Diodes, Rectifiers, Choppers – Designing voltage regulator (by using Z. diode) – Designing AC/DC adapter and a self-bias

Work Experience

- **2016 - Ongoing**
  Occupation: Researcher
  Place / Institution: Urmia University
  Subject: Wireless Power Transfer and Si Vertical Multi-Junction (VMJ) solar cells

- **2010 - 2011**
  Occupation: English Teacher
  Place / Institution: Language City of Dialect
  Subject: Teaching Advanced Levels

Publications

- **Physica Status Solidi A, Applications and Materials Science. 1–6 (2016) / DOI 10.1002/ pssa.201600275**
  "The performance of ruthenium based dye sensitized solar cells in the presence of graphene"
  Authors: Asghar Esmaeili, Sabah Gaznaghi

- **IOSR Journal of Electrical and Electronics Engineering (IOSR-JEEE), Volume 11, Issue 4 Ver. I (Jul–Aug. 2016), PP 145-150/ DOI: 10.9790/1676-110401145150**
  "Comparison of GaAs (III-V semiconductors) And Si Vertical Multijunction Solar Cells, As The Converters in The Power Beaming Systems"
  Authors: Hamid Heydari, Sabah Gaznaghi, Muhammad Shojaei Pour, Muhammad Shahraki

Conferences

- **5th Conference on Nanostructured Solar Cells at Sharif University of Technology- Tehran**
  "Effect of Charge Carrier Density On Graphene-based Dye Sensitized Solar Cell"
  Authors: Sabah Gaznaghi, Asghar Esmaeili, M.Taghi Ahmadi

- **(ISC) National Conference on Interdisciplinary Researches in Computer, Electrical, Mechanical and Mechatronics Engineering- Qazvin**

- **(ISC) 7th National Conference on Physics of Payame Noor University- Tabriz**
  "Effect of Graphene Nanocomposites on Charge Carriers Mobility in Dye Sensitized Solar Cell"
  Authors: Sabah Gaznaghi, Asghar Esmaeili

- **Conference on Low Dimensional Systems at Tabriz University- Tabriz**
  "Modeling of Hall voltage in a solar cell sensitized by graphene-based pigment"
  Authors: Sabah Gaznaghi, M.Taghi Ahmadi, Asghar Esmaeili, Bahar Meshgin Ghalam

- **Conference on Aerospace and Astronomy of Payame Noor University- Urmia**
  "Multi-dimensional universe and time-space travels"
  Authors: Sabah Gaznaghi – Awarded

Seminars

- **A Brief Review to Thin Film Solar Cells – Faculty of Sciences, Urmia University**
  Sabah Gaznaghi
- **Seminar on Nanotechnology – Urmia University**
  Sabah Gaznaghi, Kambiz Golmohammadi
- **Statistical Mechanics and Economics – Urmia University**
  Sabah Gaznaghi

Professional Computer Skills

Program	PVSyst	COMSOL MP	Silvaco	MATLAB	Mathematica	Solid Works	ATK Virtual NanoLab
Proficiency	Very Good	Very Good	Good	Good	Very Good	Fair	Good

Language Proficiency

Language	English	German		Kurdish	Persian	Azerbaijani	Turkish
Skill	Reading Writing Speaking Listening	Speaking Listening	Reading Writing	Reading Writing Speaking Listening	Reading Writing Speaking Listening	Reading Writing Speaking Listening	Reading Writing Speaking Listening
Proficiency	Excellent	Basic	Fair	Native	Native	Native	Very good

Interests and Ongoing Research Fields

Research Fields	**Explanation**
Solar Cells	Nanomaterials study and apply them to solar cells, Bandgap Engineering, Optimizing photo-electrochemical cells and vertical multi junction solar cells, Concentrating PV
Solar Energy Engineering	Systems design and engineering, Solar systems installation, Device fabrication and characterization, Project management and consultancy as well as (technical) sales, Systems simulation by using PVSyst
Wireless Power Transfer	WPT (far-field) system design and optimization, Study versatile WPT systems
Energy Storage Systems	Electrochemical cells study and optimization, Using simulators to study nanostructured batteries (Thin film Li-ion and Al-ion batteries)
Commercializing Technology	Feasibility study of commercializing technology innovations and patents
Photonics	Fiber optics in WPT, Concentration systems