

Naimah Naseri Taheri

Assistant Professor, Sharif University of Technology

CONTACT INFORMATION

Email Address: naseri@sharif.edu

Address: Department of Physics, Sharif University of Technology, Tehran, Iran.

Webpage: <http://Physics.Sharif.edu/~naseri>

Phone: +98 (912) 349-7581 +98 -21-6616-4565

EDUCATION

Sharif University of Technology, Department of Physics, Tehran, Iran (02/2007 - 09/2011)

Ph.D., Nanophysics GPA: 19.25/20

Thesis: Synthesis and investigation of photoelectrochemical cells based on semiconductor thin films doped with noble metal nanoparticles for efficient hydrogen production during water splitting

Supervisor: Professor A.Z. Moshfegh

Sabbatical: Pohang University of Science and Technology (POSTECH), South Korea Winter 2010

Supervisor: Prof. W. Choi

Sharif University of Technology, Department of Physics, Tehran, Iran (09/2004 - 01/2007)

M.Sc., Condensed Matter Physics GPA: 18.14/20

Thesis: Synthesis of sol-gel deposited WO_3 thin films doped with SiO_2 and Au nanoparticles for electrochromic and superhydrophilic applications

Supervisor: Professor A.Z. Moshfegh

Sharif University of Technology, Department of Physics, Tehran, Iran (09/2000 - 06/2004)

B.Sc., Physics GPA: 17.44/20

RESEARCH INTERESTS

- Experimental condensed matter physics
- Nanostructures characterization methods
- Solar energy conversion
- Water splitting for H_2 production
- Light trapping in branched nanostructure semiconductors
- Photoelectrochemical and photocatalytic reactions
- Carbon nanomaterials (graphene based devices)
- Supercapacitors (based on Co oxide/hydroxide nanostructures)
- New antibiotics based on 2D nanomaterials

RESEARCH EXPERIENCE

Postdoctoral fellow; Institute for Research in Fundamental Sciences (IPM), School of Physics

- Photoelectrochemical performance of TiO_2 nanotube arrays sensitized by low band gap semiconductors (such as Ag_2S , Cu_2O and CdS) to produce Hydrogen from sea water. (11/2011-04/2013)

Postdoctoral fellow; Sharif University of Technology, Department of Physics

- Synthesize of alloy Au-Ag nanoparticles in TiO_2 host for PEC applications (06/2012-01/2014)
- ZnO nanorod/graphen/ CdS nanostructure photoanodes for photoelectrochemical H_2 generation (2012-2013)
- Sol-gel deposited Ce:ZnO photoanodes for PEC applications (2008-2009)

- ZnO and WO₃ nanowires for photocatalytic applications (2008-2009)
- Investigation of catalytic properties of metal nanoparticles in growth of nanowires (2006-2008)
- Smart Windows based on transparent semiconductor thin films (2005-2007)
- PEC cell based on MoS₂ photoanodes and graphene counter electrode for H₂ evolution in water splitting reaction (2013-2015)
- Cobalt based nanostructures supported by CNT/Graphene framework as an efficient co-catalyst for water oxidation reaction (2013-2016)
- Hydrogenation of TiO₂ nanostructures for photoelectrochemical hydrogen production (04/2015-present)

FUNDED PROJECTS

- GO nanoflakes as new antibiotics against resistant bacteria, 2017- present.
Funder: National Institute for Medical Research Development.
- Low cost electro catalysts based on earth abundant metals, 2017-present.
Funder: Niroo Research Institute.
- Gold-silver alloyed nanoparticles embedded in TiO₂ photo-anode for solar hydrogen production, 2014-2015
Funder: Iran National Science Foundation.
- Cobalt based nanoflakes as efficient electro catalysts for water oxidation reaction, 2015-2016
Funder: Iran National Science Foundation.

TEACHING EXPERIENCES

- General Physics I
- Modern Physics
- Modern Physics Lab.
- Waves and Vibrations
- Methods in Experimental Physics
- Analytical Mechanics (I , II)
- Physics of Semiconductor Devices
- Spectroscopy
- Energy and Environment Seminar

HONORS

- Distinguished researcher in Sharif University of Technology (2017)
- Ranked 308nd among more than 500,000 participants in the national universities' entrance exam for B.Sc. degree (05/2000)
- Top Student ranked in M.Sc. degree for free entrance to Ph.D. (01/2007)
- Ranked second between twenty entered students in Ph.D. (01/2012)
- Nominated for 9th Khwarizmi Festival award (Young Scientists section) (02/2008)

AFFILIATIONS

- Part time researcher, Condense Mater National Lab., IPM
- Full membership in Organization for Women in science for Developing Countries
- Membership of Iranian Physics Society

- Membership of National Elite Foundation
- Organizing committee member of biennial International Conference on Nanostructure and Nanoscience
- Organizing committee member of International Nano workshop Iran-Taiwan
- Guest editor of Journal of Nanomaterials :
Editorial: R. Bayati, Y. K. Mishra, N. Naseri, and S. Nori, Nanostructured Materials for Electronics and Photonics, Volume 2014, Article ID 725764.

CURRENT EXECUTIVE APPOINTMENTS

- Vice president of student affairs, Department of Physics, Sharif University of Technology.
- Quality manager, Sharif Central Lab.
- Head of two technical committees (TC 3 & TC4), Iran office, International Organization of Legal Metrology (OIML)
- Scientific committee member, 24th Annual IASBS Meeting on Condensed Matter Physics & School on Complex Systems, Zanjan, Iran.

SELECTED ISI PUBLICATIONS

- M. Faraji, M. Youssefi, S. Yousefzadeh, M. Zirak, N. Naseri, A.Z. Moshfegh, Two Dimensional Materials in Semiconductor Photoelectrocatalytic Systems for Water Splitting; Energy & Env. Sci. 2018, In Press.
- S. Qarechaloo, N. Naseri, F. Salehi, A.Z. Moshfegh, Simply Tuned and Sustainable Cobalt Oxide Decorated Titania Nanotubes for Photoelectrochemical Water Splitting, Appl. Surf. Sci. 464 (2019) 68.
- A. Ziashahabi, R. Poursalehi, N. Naseri, Shed light on submerged DC discharge synthesis of low band gap gray Zn/ZnO nanoparticles: Formation and gradual oxidation mechanism, Adv. Powder Tech. 29 (2018) 1246.
- H. Sameie, AAS. Alvani, N. Naseri, S. Du, F. Rosei, First-Principles Study on ZnV_2O_6 and $\text{Zn}_2\text{V}_2\text{O}_7$: Two New Photoanode Candidates for Photoelectrochemical Water Oxidation, Ceramics Int. 44 (2018) 6607.
- A. Seza, F. Soleimani, N. Naseri, M. Soltaninejad, S.M. Montazeri, S.K. Sadrnezhad, M.R. Mohammadi, H. Asgari Moghadam, M. Forouzandeh, M.H. Amin, Novel microwave-assisted synthesis of porous g-C₃N₄/SnO₂ nanocomposite for solar water-splitting, Appl. Surf. Sci. 440 (2018) 153.
- R Salimi, AAS Alvani, N Naseri, SF Du, D Poelman, Visible-enhanced photocatalytic performance of CuWO₄/WO₃ hetero-structures: incorporation of plasmonic Ag nanostructures, New J Chem. 42 (2018), 11109.
- A Ziashahabi, R Poursalehi, N Naseri, Formation mechanism of bead-chain-like ZnO nanostructures from oriented attachment of Zn/ZnO nanocomposites prepared via DC arc discharge in liquid, Mater. Sci. Semicond. Proc. 72 (2017) 12
- H. Sameie, AAS. Alvani, N. Naseri, F. Rosei, G. Mul, BT Mei, Photocatalytic Activity of ZnV₂O₆/reduced Graphene Oxide Nanocomposite: From Theory to Experiment, J. Electrochem. Soc. 165 (2018) H353.
- M. Pourreza, N. Naseri, Engineered Cost Effective Growth of Co based Nanoflakes as Sustainable Water Oxidation Electrocatalyst, J. Physics D, 50 (2017) 475501.

- Naimeh Naseri, Ștefan Țălu, Slawomir Kulesza, ShervinQarechaloo, Amine Achour, Miroslaw Bramowicz, Atefeh Ghaderi, Shahram Solaymani, How morphological surface parameters are correlated with electrocatalytic performance of cobalt-based nanostructures, *J. Indust. Eng. Chem.* 57 (2018) 97.
- M.Qorbani, T.Chou, Y.Lee, S.Samireddi, N. Naseri, A. Ganguly, A.Esfandiar, C.Wan, L.Chen, K.Chen, A. Z Moshfegh Multi-porous Co₃O₄ nanoflakes @ sponge-like few-layer partially reduced graphene oxide hybrids: towards highly stable asymmetric super-capacitors, *J. Mat. Chem. A*, 24 (2017) 12569.
- N. Naseri, S. Solaymani, A.Ghaderi, M.Bramowicz, S.Kulesza, Ș.Țălu, M.Pourreza, S. Ghasemi, Microstructure, morphology and electrochemical properties of Co nanoflake water oxidation electrocatalyst at micro- and nanoscale, *RSC Advances*, 7 (2017) 12923.
- N Naseri, Photoresponse enhancing in nanostructured WO₃ films by slight change in heating ambient, *J Alloys Compounds*, 2017, 693, 871.
- R. Irani, N. Naseri, S. Beke, A Review of 2D-based Counter Electrodes Applied in Solar-assisted Devices, *Coordination Chem. Rev.* 324 (2016) 54.
- N Naseri, A. Esfandiar, M. Qorbani, A.Z. Moshfegh, Selecting Support Layer for Electrodeposited Efficient Cobalt Oxide/Hydroxide Nanoflakes to Split Water, *ACS Sustainable Chem. Eng.* 4 (2016) 3151.
- M. Qorbani, N. Naseri, A.Z. Moshfegh, Hierarchical Co₃O₄/Co(OH) Nanoflakes as a Supercapacitor Electrode: Experimental and Semi-Empirical Model. *ACS Appl. Mater. Interfaces* 7 (2015) 11172.
- N. Naseri, M. Qorbani, H. Kim, W. Choi, A.Z. Moshfegh, To What Extent Surface Morphology can Influence on Photoelectrochemical Performance of Au:WO₃ Electrodes? *J Phys Chem C* 119 (2015) 1271.
- N. Naseri, P. Sangpour, H. Mousavi, Applying Alloyed Metal Nanoparticles to Enhance Solar Assisted Water Splitting, *RSC Advances*, 2014,4, 46697.
- M. Qorbani, N. Naseri, O. Moradlou, R. Azimirad, A. Z. Moshfegh, How CdS Nanoparticles Can Influence TiO₂ Nanotube Arrays in Solar Energy Applications?, *Applied Catalyst B: Environment*, 162 (2015) 210.
- N. Naseri, H. Kim, W. Choi and A.Z. Moshfegh, First Implementation of Ag Nanoparticle Incorporated WO₃ Thin Film Photoanode for Hydrogen Production, *International Journal of Hydrogen*, 38 (2013) 2117.
- N. Naseri, H. Kim, W. Choi and A.Z. Moshfegh, Optimal Ag Concentration for H₂ Production via Ag:TiO₂ Nanocomposite Thin Film Photoanode, *International Journal of Hydrogen* 37 (2012) 3056.
- N. Naseri, M. Yousefi and A.Z. Moshfegh, The role of TiO₂ addition in ZnO nanocrystalline thin films: Variation of photoelectrochemical responsivity, *Electrochimica Acta*, 56 (2011) 6284.
- N. Naseri, M. Yousefi, O. Moradlou and A. Z. Moshfegh, The first study on enhanced photoresponsivity of ZnO–TiO₂ nanocomposite thin films by anodic polarization, *Phys. Chem. Chem. Phys.* 13 (2011) 4239.