Ali Akbar Ashkarran, PhD

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Curriculum Vitae

Accomplished nanoscience professional with a solid history of success performing extensive research to provide valuable diagnoses and therapeutics; positioned to excel in demanding nanomedicine and environmental purification research area. Extensive training in material science, cell culture, and instrumental analysis and characterization. Advanced research and studies in nanoscience and nanotechnology, Skilled assistant professor and supervisor to successful undergraduate and postgraduate research and academics. A prolific author/reviewer, creative entrepreneur and accomplished scientist, engaging in research at the very forefront of the field.

Education and Credentials

Doctor of Philosophy in Nanoscience and Nanotechnology, SHARIF UNIVERSITY OF TECHNOLOGY, Tehran, Iran, 2009
Dissertation: Synthesis and characterization of metal and metal oxide nanoparticles by arc discharge method in liquids

Master of Science in Solid State Physics, UNIVERSITY OF TEHRAN, Tehran, Iran, 2005

Bachelor of Science in Solid State Physics, UNIVERSITY OF MAZANDARAN, Babolsar, Iran, 2003

Research Accomplishments

Department of Chemistry and Chemical Biology, **Postdoctoral Research Fellow**, HARVARD UNIVERSITY, Cambridge, Massachusetts, since 2018

Department of Physics, **Assistant Professor**, University of Mazandaran, Babolsar, Iran, 2013 to 2017

Plasma Physics Research Center, **Lecturer,** Islamic Azad University, Tehran, Iran, 2010 to 2013

Grants

Iran National Science Foundation (INSF) "Designing and fabrication of electrospinning system for production of TiO_2 nanofibers for environmental purification, $12,000/1-year, 2010-2011

Iran National Science Foundation (INSF) "Synthesis of triangular silver nanostructures, $10,000/1-year, 2011-2012

Iran National Science Foundation (INSF) "Metallic nanoparticles (NPs) in carbon nano tubes (CNTs) for enhanced field emission displays, $10,000/1-year, 2012-2013

International awardee:

- "Asia Nano Forum"; Fully funded, 18-day, 2011
- "ICTP Workshop on Material Challenges in Devices for Fuel Solar Production"; Fully funded, 7-day, 2014

Scholastic Experience

HARVARD UNIVERSITY, Cambridge, Massachusetts

Postdoctoral Research Fellow, Department of Chemistry and Chemical Biology, 2018 to Present

Advisor to the following undergraduate students:

Alberta Boafo-Arko; Undergraduate student at **University of Maryland** Visiting **Harvard University** June-August 2018

Racquel White; Undergraduate student at **Navajo Technical University** Visiting **Harvard University** June-August 2018

Dominique Pablito; Undergraduate student at **University of Utah** Visiting **Harvard University** June-August 2018

UNIVERSITY OF MAZANDARAN, Babolsar, Iran
Assistant Professor, Department of Physics, September 2013 to December 2017,
Taught undergraduate and graduate students Quantum Mechanics, Analytical Mechanics, Solid State Physics, Superconductivity, Mathematical Physics, Physics of Semiconductors, Thermodynamics, Advanced Solid State Physics,

Continued…

Advanced Statistical Mechanics, Condensed Matter, Electrodynamics, An Introduction to Nanophysics; Nanoparticles and Applications, Characterization Techniques for Nanomaterials.

PLASMA PHYSICS RESEARCH CENTER, Islamic Azad University, 2010 to 2013
Lecturer;
Taught undergraduate students the following courses,
Introductory Physics, Solid State Physics, Analytical Mechanics, Modern Physics, Superconductivity, General Physics Laboratories

Publications

Over 65 publications in professional journals (**Chemical Reviews, Trends in Biotechnology, Nanoscale, Nanotechnology, Sensors and Actuators B, Chemical Research in Toxicology, etc.**) and other speaking engagements.

See Google Scholar for details:

https://scholar.google.com/citations?user=IENKhbYAAAAJ&hl=en

- **h-Index and Citations*:*** >65 scientific papers.
- **h-index = 19** (i.e., 19 publications each with 19 or more citations).
- **Total citations: >2400**. i10-index = 29 (# papers with ≥10 citations).

Selected Publications

- M Derakhshi, **AA Ashkarran***, A Bahari, S Bonakdar, "Synergistic effect of shape-selective silver nanostructures decorating reduced graphene oxide nanoplatelets for enhanced cytotoxicity against breast cancer", **Nanotechnology, 2018,** 29, 285102-
- P Shahini, **AA Ashkarran*,** "Immobilization of plasmonic Ag-Au NPs on the TiO_2 nanofibers as an efficient visible-light photocatalyst", **Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2018,** 537, 155-162
- S Daemi, **AA Ashkarran*,** A Bahari, S Ghasemi, "Fabrication of a gold nanocage/graphene nanoscale platform for electrocatalytic detection of hydrazine" **Sensors and Actuators B: Chemical 2017,** 245, 55-65.
- S Daemi, **AA Ashkarran*,** A Bahari, S Ghasemi, "Gold nanocages decorated biocompatible amine functionalized graphene as an efficient dopamine sensor platform", **Journal of Colloid and Interface Science, 2017**, 494, 290-299.
- **AA Ashkarran*,** S Daemi, "Tuning the Plasmon of Metallic Nanostructures: From Silver Nanocubes Toward Gold Nanoboxes", **Plasmonics 2016**, 11, 1011-1017.
- **A.A. Ashkarran*,** B. Mohammadi, "ZnO nanoparticles decorated on graphene sheets through liquid arc discharge approach with enhanced photocatalytic performance under visible-light", **Applied Surface Science, 2015,** 342, 112-119
- S. Behzadi, F. Ghasemi, M. Ghalkhani, **A.A. Ashkarran,** M. Akbari, S. Pakpour, M.R. Hormozi-Nezhad, Z. Jamshidi,S. Mirsadeghi, R. Dinarvand, F. Atyabie,h, M. Mahmoudi, "Determination of nanoparticles using UV-Vis spectra", **Nanoscale, 2015,** 7 5134-5139.
- **A.A. Ashkarran*,** H. Hamidinezhad, H. Haddadi, M. Mahmoudi, "Double-doped TiO_2 nanoparticles as an efficient visible-light-active photocatalyst and antibacterial agent under solar simulated light", **Applied Surface Science, 2014,** 301, 338.
- **A. A. Ashkarran*,** M. Fakhari, M. Mahmoudi, "Synthesis of a solar photo and bioactive CNT-TiO_2 nanocatalyst", **RSC Advances, 2013,** 3, 18529.
- H. Y. Mao, S. Laurent, W. Chen, O. Akhavan, M. Imani, **A. A. Ashkarran,** M. Mahmoudi, "Graphene: Promises, Facts, Opportunities, and Challenges in Nanomedicine", **Chemical Reviews, 2013,** 113, 3407.
- **A. A. Ashkarran*,** M. Ghavami, H. Aghaverdi, P. Stroeve, M. Mahmoudi, "Bacterial Effects and Protein Corona Evaluations: Crucial Ignored Factors in the Prediction of Bio-Efficacy of Various Forms of Silver Nanoparticles**", Chemical Research in Toxicology, 2012,** 25, 1231.
- M. Hajipour, K. M. Fromm, **A. A. Ashkarran**, D. J. de Aberasturi, I. Ruiz de Larramendi, T. Rojo, W. J Parak, M. Mahmoudi, "Antibacterial properties of nanoparticles", **Trends in Biotechnology, 2012,** 30, 499.
- **A. A. Ashkarran*,** S. M. Aghigh, M. kavianipour, N. J. Farahani, "Visible light photo-and bioactivity of Ag-doped TiO_2 nanoparticles with various silver contents", **Current Applied Physics, 2011,** 11, 1048.
- **A. A. Ashkarran*,** S. A. Ahmadi Afshar, S. M. Aghigh, M. kavianipour, "Photocatalytic activity of ZrO_2 nanoparticles prepared by electrical arc discharge method in water", **Polyhedron, 2010,** 29, 1370.
- **A. A. Ashkarran*,** "A novel method for synthesis of colloidal silver nanoparticles by arc discharge in liquid", **Current Applied Physics, 2010,** 10, 1442.

- **A. A. Ashkarran,** A. Iraji zad, S. M. Mahdavi, M. M. Ahadian, "ZnO nanoparticles prepared by electrical arc discharge method in water", **Materials Chemistry and Physics, 2009,** 118, 6.
- **A. A. Ashkarran,** A. Iraji zad, M. M. Ahadian and S. A. Mahdavi Ardakani, "Synthesis and photocatalytic activity of WO_3 nanoparticles prepared by arc discharge method in deionized water", **Nanotechnology, 2008,** 19, 195709.
- **A. A. Ashkarran,** M.R. Mohammadizadeh, "Photo induced Super-hydrophilicity of TiO_2 thin film using the Sol-Gel method with$Ticl_4$ as a precursor", **Materials research and bulletin, 2007,** 43, 522.

and more than 40 other publications. (***:** Corresponding author**)**

Honors and Awards

Distinguished Researcher Award, Province of Mazandaran, 2015
International Centre for Theoretical Physics (ICTP) Grant, 2014
Distinguished Researcher Award, University of Mazandaran, 2014
Asia Nano Forum Award, South Korea, 2011
Distinguished PhD, Sharif University of Technology, 2009
Exceptional Talents Award, Sharif University of Technology, 2008

Editorial Board

1. International Journal of Nanomedicine
2. Heliyon
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