

## GENERAL INFORMATION

Title: Prof. Dr.

First name: Abdolreza (Arash)

Family name: Simchi

Citizenship: Iran

Born on: Tehran, Iran



Affiliation: Department of Materials Science and Engineering and Institute for Nanoscience and nanotechnology, Sharif University of Technology

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Google Scholar: <https://scholar.google.com/citations?user=McKtXdwAAAAJ&hl=en>

## EDUCATION

Materials Science and Engineering Department, Sharif University of Technology, Teheran, Iran

- Ph.D. in Materials Science and Engineering (2001):
  - Area of Specification: Advanced Materials (Major) and Powder Metallurgy and Particular Materials (Minor)
- M.Sc. in Materials Science and Engineering (1994)
  - Area of Specification: Selection and Design of Engineering Materials
- B.Sc. in Process Metallurgy (1991)

## AWARDS and HONORS

### *A) International*

- George Foster Research Award for the Lifetime Teaching and Research Achievement, Alexander von Humboldt Foundation, Bonn, Germany, August 2020
- Ranked as 1% Top World Scientists based on Citation, IST Web of Science, 2012-2019
- The Royal Society Fellowship, UK, February 2009 to May 2009.
- Best Paper Award, Second Yellow Sea Rim Workshop on Explosion, Combustion and other Energetic Phenomena, Kumamoto University, Kumamoto, Japan, September 9-10, 2008.

- Materials Award, European Powder Metallurgy Association (EPMA). Shared with Dr. F. Petzoldt and Dr. H. Pohl for Developing and patenting of a New Material, named LaserTool, for Direct Metal Laser Sintering. October 2003.
- World Intellectual Property Organization (WIPO) Award (Gold Medal and Certificate) as the Best Young Inventor, United Nations Organization, February 2003
- Kharazmi International Award: Bestowed by sitting President of the Republic of Iran, Dr. Seyed Mohammad Khatami, February 2003.
- George Forester Fellowship for Scientist of Developing Countries, Alexander von Humboldt Foundation, Bonn, Germany, April 2000 to April 2001.
- Fraunhofer Institute Research Fellowship, Bremen, Germany, August 1999 to March 2000.

### ***B) National***

- Allame Tabatabaie Prize, National Elite Foundation: Bestowed by sitting President of the Republic of Iran, Dr. Hassan Rouhani, May 2014.
- Nationwide Distinguished Researcher: Bestowed by sitting Vice-President of the Republic of Iran in Science, Research and Technology, Prof. Dr. Farji-Dana, November 2013.
- Nano Award 2012 (ranked as Top 10 in Nanoscience and Nanotechnology by the Iranian Nanotechnology Initiative Council): Bestowed by sitting Vice-President of the Republic of Iran in Science, Research and Technology, Drs. M. Soltankhah, November 2011
- Nano Award 2011 (ranked as Top 10 in Nanoscience and Nanotechnology by the Iranian Nanotechnology Initiative Council): Bestowed sitting Vice-President of the Republic of Iran in Science, Research and Technology, Drs. M. Soltankhah, November 2011.
- Nano Award 2010 (ranked as Top 10 in Nanoscience and Nanotechnology by the Iranian Nanotechnology Initiative Council): Bestowed sitting Vice-President of the Republic of Iran in Science, Research and Technology, Drs. M. Soltankhah, November 2010
- Nano Award 2009 (ranked as Top 10 in Nanoscience and Nanotechnology by the Iranian Nanotechnology Initiative Council): Bestowed sitting Vice-President of the Republic of Iran in Science, Research and Technology, Drs. M. Soltankhah, November 2009
- Distinguished Researcher of Ministry of Science, Research and Technology: Bestowed by sitting President of the Republic of Iran, November 2008
- Distinguished Researcher of Tehran Province: Bestowed by the Governor General of Tehran Province, Prof. Dr. Kamran Daneshjo, November 2007

- Distinguished Professor of the University: Bestowed by sitting Vice Minister for Research and Technology, Prof. Dr. Mansour Kabganian, January 2007
- National PhD scholarship of Ministry of Science, Research and Technology, I.R. Iran, September 1996 to June 1998.

### *C) Sharif University of Technology*

- Teaching Award: Bestowed by the Board of Governors, May 2018.
- Highly-cited Researcher Award: Bestowed by the sitting Vice-Presidency for Research and Technology, Prof. Dr. Mohammadreza Movahedi, December 2017
- Book Writing Award: Bestowed by the Vice-Presidency for Research and Technology, Prof. Dr. Mohammadreza Movahedi, December 2016
- Distinguished Researcher Award: Bestowed by sitting University President, Prof. Dr. Mahmoud Fotuhi-Firowzabad, November 2015
- Distinguished Researcher Award: Bestowed by sitting University President, Prof. Dr. Fotoohi Firowzabad, Prof. Mahmoud Fotuhi-Firowzabad, November 2014.
- Dr. Mojtahedi Innovation Award: Distinguished Innovation in Research and Education: Bestowed by Sharif University of Technology Association (SUTA) June 2010.
- Book Writing Award: Bestowed by sitting University President, Prof. Dr. Sayed Sohrapour, November 2006.
- Student Teaching Award: Bestowed by the Board of Governors, May 2005.
- Distinguish Professor Award: Bestowed by sitting University President, Prof. Dr. Sayed Sohrapour, February 2004
- Distinguished Researcher Award: Bestowed by sitting University President, Prof. Dr. Sayed Sohrapour, November 2003
- First-ranked Graduated Student Award in Materials Science and Engineering, Bestowed by sitting University President, Prof. Dr. Sayed Sohrapour, March 2002.
- ‘Honored Graduated Student’ selected by the Alumni Association among all the graduated students of the Department in the Period of 30 Years (about 3000 students): Bestowed by sitting Chair of the Department, Prof. Dr. Amir Hussein Kokabi, May 2001.
- Ranked 1st in all steps of studying including PhD (1994-1999), PhD General and Qualification Exams (April 1997), Ph.D. Entrance Exam (February 1994), MSc (1992-1994); MSc Entrance Exam (September 1991) and B.Sc. (1986-1991).

## **RESEARCH INTERESTS**

Nanomaterials; Advanced Functional Materials; Innovative Manufacturing Techniques; Biomaterials

## **INTERNATIONAL WORK EXPERIENCES**

### ***A) Germany***

- August 2019 to October 2019: Visiting Professor, Fraunhofer Institute for Manufacturing and Advanced Materials (IFAM), Bremen, Germany.
- June 2016 to July 2016 and August 2015 to September 2015: Visiting Professor, Max-Planck Institute for Polymer Research, Mainz, Germany.
- September 2010 to December 2010: Visiting Professor, Department of Biomaterials, Max-Planck Institute of Colloids and Interfaces, Potsdam, Germany
- July to September 2004 to 2007: Visiting Professor, Fraunhofer Institute for Manufacturing and Advanced Materials (IFAM), Germany

### ***B) Canada***

- July 2011 to September 2012: Visiting Professor, Department of Electrical and Computer Engineering, University of Toronto, Canada

### ***C) UK***

- March 2009 to June 2009: Academic Visitor, Department of Materials, Imperial College London

### ***D) Austria***

- August 1998 to February 1999: Visiting Student, Institute for Chemical Technology of Inorganic Materials, Vienna University of Technology, Vienna, Austria

## **TEACHING EXPERIENCES**

### ***A) Graduate Courses***

Nanomaterials (3 credits); Nanotechnology I (2 credits); Special Topics in Nanotechnology (1 credits); Additive Manufacturing Technologies (2 credits); Thermodynamics in Materials Science (2 credits); Laser Materials Processing (2 credits); Advances in Powder Metallurgy (2 credits)

### ***B) Undergraduate Courses***

Principles of Materials Science and Engineering (3 credits); Selection and Design of Metals and Alloys (2 credits); Thermodynamics of Materials (3 credits); Physical Chemistry of Materials (3 credits); Heat Treatment of Metals and Alloys (3 credits); Kinetics and Process Control in Metallurgy (3 credits); Powder Metallurgy (2 credits)

## **EXRCUTIVE POSITIONS**

- Since May 2019: Member of Faculty Promotion Committee of the University; Appointed by sitting Minister of Science, Research and Technology, Prof. Dr. Mansour Gholami
- Since November 2017: Dean of International Affairs; Appointed by sitting University President, Prof. Dr. Mahmoud Fotuhi-Firowzabad
- Since June 2017: Member of the Steering Committee for Internationalization of Iranian Universities, Ministry of Science, Research and Technology; Appointed by sitting Minister of Science, Research and Technology, Prof. Dr. Mansour Gholami
- August 2016 to December 2017: Member of Publication Committee of Engineering Sciences at the Ministry of Science, Research and Technology; Appointed by sitting Dean of Research and Technology, Dr. Sharifi.
- May 2013 to May 2018: Member of University Elite Committee, The Office of Vice President for Education Affairs; Appointed by sitting University President, Prof. Dr. Mahmoud Fotuhi-Firowzabad
- Since 2010: Editor, Scientia Nanotechnology: An international journal that publishes original papers at the forefront of Nanoscience and Nanotechnology [http://www.elsevier.com/wps/find/journaldescription.cws\\_home/725692/description#description](http://www.elsevier.com/wps/find/journaldescription.cws_home/725692/description#description) (ISSN: 1026-3098).
- Since 2004: Member of Research Board, Institute for Nanoscience and Nanotechnology (INST; [www.inst.sharif.edu](http://www.inst.sharif.edu)); Appointed by sitting Presidents of the University.
- 2001-2007: Consultant of Nanotechnology and Advance Materials Groups High-Tech Industries Center, Iranian Ministry of Mining and Metals, Tehran
- 2003-2004: Advisor and Consultant of Advance Materials Investment Company (AMID), Tehran, Tehran
- 2002-2004: Vise Chair of the Research Office at the Department of Materials Science and Engineering, Sharif University of Technology; Appointed by sitting chair of the Department, Prof. Dr. Seyed Morteza Seyed Raihani
- 2001-2002: Manager of Computer Center, Department of Materials Science and Engineering, Sharif University of Technology, Tehran

## **MEMBERSHIP IN PROFESSIONAL ORGANISATIONS**

- American Chemical Society (USA)
- Materials Research Society (USA)

- Iranian Nanotechnology Association
- Iranian Metallurgical Engineering Association

### **MEMBER OF EDITORIAL BOARDS OF ACCREDITED JOURNALS**

- Scientia Iranica
- Nanochemistry Research
- Nanostructures
- Journal of Particle Science and Technology
- Advanced Materials Technologies

### **LANGUAGE ABILITY**

- Persian: Mother tongue
- English: Fluent verbal and written communication skills
- German: Intermediate verbal and written communication skills

### **FUNDED AND SUPERVISED POSTDOCTORAL RESEARCHERS**

- Dr. Mohammadreza Khodabakhsh, 2019-to present
- Dr. Nooshin Zandi, 2019-to present
- Dr. Fatemeh Mohandes, 2015-to present
- Dr. Maryam, Mohammadi, 2017-to present
- Dr. Bentolhoda Hadavi, 2019-to present
- Dr. Mahdi Hassanzadeh, 2018-2019
- Dr. Fatemeh-Sadat Pishbin, 2017-2018
- Dr. Amirhossein Berenjchi, 2017-2019
- Dr. Hajar Ghanbari, 2017-2018
- Dr. Masoud Berahman, 2017-2018
- Dr. Ehsan Rezvani, 2017-2018
- Dr. Ali Afshar Farnia, 2017-2018
- Dr. Amir Hatami, 2016-2018
- Dr. Niloofar Eslahi, 2016-2017

- Dr. Reza Shidpour, 2015-2016
- Dr. Farzad Khodabakhshi, 2015-2016

## **SUPERVISED STUDENTS**

### ***A) PhD dissertation***

- E. Golafshan, “Design, synthesis and evaluation of scaffolds based on three dimensional graphene and piezoelectric polymers for soft tissue engineering”, 2018-2020.
- R. Lotfi, “Development and characterization of hydrogel composites containing 2D nanostructures as bioinks for 3D bioprinting and tissue engineering”, 2018-2020.
- G. Kafili, “3D bioprinting of amniotic membrane-based nanocomposite for tissue engineering: evaluation of rheological, mechanical and biological properties”, 2019-2021.
- H. Tohidi, “Synthesis and Rheological study of Electro-responsive and Injectable Hydrogel Composites for Cardiac Tissue Engineering”, 2018-2020.
- A. Ramedani, “Development of a targeted theranostic delivery system based on liposomes containing graphene quantum dots and drug nanoparticles for monitoring and treatment of breast cancer”, 2017-2019.
- M. Saeidi, “Flexible nanobiosensors based on 3D graphene/gold hybrids for detection of adenosine triphosphate (ATP)”, 2017-2019.
- M. Mojaddami, Investigation of optoelectronic properties of BN quantum dots / TMD nanostructures used for water splitting”, 2017-2019.
- S. Ayneband, “Investigation the effect of ligand exchange on the sensivity of nano crystal perovskite photodetectors and improve their stability by the use of 2D nanosheets”, 2016-2018.
- S. Haghshenas, “The photocatalytic and photoluminescence properties of quasi core shell ZnO-Graphene oxide nanoparticles”, 2016-2018.
- N. Zandi, “Gelatin-based core shell nanofibrous scaffold containing proteoglycan nanoparticles for control release of growth factor”, 2016-2018.
- M. Mazaheri, “Fabrication of a Hybride Graphene-Gold Nanostructured Electrode for Biosensing”, 2014-2017.
- N. Mahmoudi, “Chitosan-Gaphene Oxide Nanofibers for Wound Dressing: Fabrication and Biological Studies”, 2012-2016.
- M.M. Tavakoli, “Surface Engineering of Colloidal Quantum Dot Solar Cells”, 2012-2015.

- F. Ordikhani, “Fabrication of a Novel Drug Eluting Three-dimensional Scaffolds for Orthopedic Application”, 2011-2014.
- F. Khodabakhshi, “Stir Friction Welding of Metal Matrix Nanocomposites”, 2011-2014.
- M. Mansouri, “Kinetics of Recrystallization of Amorphous Al-Ni-Fe-TM alloy”, 2010-2014.
- R. Shidpour, “Design and Fabrication of Supported Au Nanocatalysts with Particulate and Mesoporous Supports and DFT Simulation of Au Nanocatalyst”, 2009-2014.
- N. Mahmoudi, “Electrospinning of Chitosan/PVP/GO Nanocomposites for Skin Tissue Engineering” 2012-1014.
- H. Delavari, “Synthesis of Magnetic Nanoparticle for Hyperthermia Therapy”, 2009-2012.
- M.R. Akbarpour, “Investigation of mechanical properties and thermal stability of Cu/SiC-CNTs nanocomposites”, 2009-2013.
- M. Farvazi, “Synthesis and Investigation of Wear Behavior of Al<sub>2</sub>O<sub>3</sub>/NiTi Particulate Reinforced Nanocomposites”, 2009-2013.
- H. Malaki, “Synthesis, Characterization, and Surface Engineering of Iron Oxide Nanoparticles for Cell Separation” 2009-2013.
- E. Tamjid, “Effect of Bioglass Particle Size and Titania Morphology on the Bioactivity and Kinetics of Tissue Growth in Three-Dimensional Poly( $\epsilon$ -Caprolactone) Scaffolds with Controlled Pore Structure Produced by 3D-Printing Process”, 2008-2011.
- M. Mahmoudi, “Surface Engineering of Iron Oxide Nanoparticles for Drug Delivery Application”, 2007-2010.
- H. Asgharzadeh, “Synthesis and Characterization of Nanocrystalline Al6061-Al<sub>2</sub>O<sub>3</sub> Nanocomposites”, 2007-2010.
- M. Dourandish, “Reaction and Interface Formation during Sinter-joining of Nanocrystalline 3Y-TZP Ceramic to Stainless Steel”, 2007-2010.
- M. Rajabi, “Characterization of Rapidly Solidified Al-20Si-5Fe-M (M=Cu, Cr, Ni) Alloys Produced by Melt Spinning and Gas Atomization”, 2006-2009.
- Z. Razavi Hesabi, “Effect of Reinforcement Particle Size on the Processing and Mechanical Properties of Al-Al<sub>2</sub>O<sub>3</sub> Nanocomposites”, 2004-2008.
- S. Kamani, “Effect of Reinforcement Volume Fraction on the Processing and Mechanical Properties of Al-SiC Nanocomposites”, 2004-2008.



**B) MSc thesis**

- Zahra Zamani, " Fabrication and characterization of photoelectrodes based on FeNiCo layered double hydroxides and tungsten trioxide for solar seawater splitting", 2021-2022.
- Vahid Kamraninezhad, " Investigation on effect of Cs<sub>1-x</sub>FaxPbI<sub>3</sub> QDs as an interracial layer on efficiency of perovskite solar cells", 2021-2022.
- Morvarid Kohkhezri, " Synthesis and characterization of polymeric composite containing two-dimensional nano structure of MXene in tissue engineering", 2021-2022.
- Mohammadreza Kabirian, "Using copper nanocluster on copper oxide electrode for hydrogen production in water splitting", 2020-2021.
- Farzad Montazeri, " Synthesis and characterization of metal-organic frameworks as carrier for gene-therapy applications", 2020-2021.
- Hossein Mahdavi, "Synthesis and characterization of creatinine biosensors based on metal-organic frameworks", 2020-20121.
- Nima Tabatabaee, "Synthesis and characterization of cesium-based perovskite quantum dots for optoelectronic applications", 2020-2021.
- Jafar Khanjari, "Fabrication of conductive nanographene-based systems for targeted drug delivery applications", 2020-20121.
- Z. Saadat, "Investigation of electro-optical properties of heterostructures based on 2-D layered materials by quantum simulation", 2019-2020.
- M. Hassanzadeh, "Synthesis and stability improvement of perovskite quantum dots and using in optical device", 2019-2020.
- B. Noormohammadi, "Fabrication and characterization of water splitting electrodes based on nanostructure of hybride carbon with hydroxide structures of Ni-Fe-Co", 2019-2020.
- Z. Roojin, "Development of polymeric coating containing bioactive glass 45S5 on magnesium and investigation its biocompatibility in the simulated body fluid (SBF) ", 2018-2019.
- R. Rahmati, "Fabrication of 3D graphene/gold porous electrode for biosensing application", 2018-2019.
- A. Hemmati, "Manipulation of electronic structure in BNNS to improve catalytic and photocatalytic properties", 2018-2019.
- Z. Razzaghi, "Transport properties in heterostructures of 2D layers of graphene with WS<sub>2</sub> and hBN quantum dots", 2018-2019.

- S. Angizi, "Synthesis and characterization of boron nitride quantum dots using mechanical milling-solvothermal process", 2016-2017.
- A. Mamoodi, "Design and fabrication of electric field sensor for biological and corrosion currents application", 2016-2017.
- N. Bagheri, "Synthesis and characterization of graphene quantum dot/iron oxide hybrid nanoparticles", 2016-2017.
- H. Gheysari, "Preparation and characterization of hydroxyapatite nanostructures using natural resources for bone scaffold applications", 2015-2016.
- A. Tohidi, "Synthesis and characterization of hybrid smart nanohydrogel pluronic-chitosan/graphene/magnetic nanoparticles with ability of drug release to cure cancer", 2015-2016.
- A. Azarnia, "Surface modification of bacterial cellulose-reinforced keratin nanofibers using pluronic/gum tragacanth hydrogel nanoparticles produced by concurrent gel electrospray/polymer electrospinning method", 2015-2016.
- E. Zahedi, "Electrospun core-shell PCL/Chitosan/Creatine/Aloe vera scaffolds for skin tissue engineering", 2015-2016.
- S. Soveizi, "Chemical vapor processing of 2D MoS<sub>2</sub> nanolayers for next generation in optoelectronic devices: characterization and properties", 2015-2016.
- M.R. Rahmani, "Synthesis and characterization of WS<sub>2</sub> 2D nanolayers for next generation optoelectronic devices", 2015-2016.
- A. M. Mohammadzadeh, "Fabrication of hybrid graphene/metal electrode for biosensor applications", 2015-2016.
- A. Nejadshalim, "Synthesis and Evaluation of Photovoltaic Properties of Lead-Halide Perovskite", 2014-2015.
- S. Akhoondi, "Synthesis and Characterization of Hybrid of Gold Nanoparticles-Graphene Quantum Dots", 2014-2015.
- M. Ayobi, "Synthesis of Quantum Dots-Graphene Hybrids with Study of Optoelectronic and Biocompatibility Properties", 2014-2015.
- F. Kiani Shahvandi, "Deposition of Graphene on the Silicon Wafer and Investigation of its Optoelectronic and Biocompatibility Properties", 2014-2015.
- M. Abdorrahim, "Synthesis and Characterization of ATPEG-PMDA Hydrogel Including Magnetic Iron Oxide with Temperature Sensitive Coating for Artificial Cartilage Tissue Engineering", 2014-2015.

- M.H. Mirfasih, “Effect of Transition Metals on the Optoelectronic Properties of PbS Quantum Dots”, 2013-2014.
- F. Ostadhossein, “Electrospinning of Chitosan/Bacteria Cellulous/Nanodiamonds for Wound Dressing”, 2013-2014.
- M.A. Mobarhan, “Hot Deformation Behavior of Al/SiC Nanocomposites”, 2013-2014.
- M.M. Mirzaie, “Electrophoretic Deposition and Sintering of a Co-Mn Spinel Coating on Stainless Steel for Solid Oxide Fuel Cells Connectors: 2012-2013.
- A.A. Nojomi, “Development of a PEG-based Hydrogel for Articulate Cartilage”, 2012-2013.
- A. Manafirad, “A Nano-Drug Delivery System for Targeted Rapamycin Delivery for Bypass Graft Surgery”, 2011-2012.
- M. Mazaheri, “Fabrication and Cytotoxicity Assessment of a Graphene-Polysaccharide Nanocomposite for Tissue Engineering”, 2011-2012.
- N. Ebrahimi, “Molecular Dynamic Simulations of Shape Memory Effect in TiNi Nanowires”, 2011-2012.
- A. Salahi, “Study of the Corrosion Behavior of 316L/17-4PH Layered Composites with a Nanostructured Nickel Interlayer”, 2011-2012.
- A.H. Gorji, “Transient Liquid Joining of Nanostructured Zirconia to Stainless Steels Employing Ni and Ag Nanoparticles”, 2011-2012.
- N. Esfandiari, “Synthesis and Antibacterial Activity Evaluation of TiO<sub>2</sub>/Ag nanorods”, 2010-2011.
- M. Mansourian, “Synthesis and Bioactivity of Chitosan/Nano-diamond Coatings” 2010-2011.
- Z. Bakhshi, “Development of a Drug-Eluting Nanocoating for Orthopedic Application”, 2010-2011.
- M. Daryani, “Effect of Ti on Dehydrogenation of Nanostructured Magnesium Hydride for Mobile Hydrogen Storage”, 2010-2011.
- H. Ghasemi, “Fatigue Properties of Nanostructured Al-SiC Nanocomposites”, 2010-2011.
- H. Amini, “Atomistic Simulation of Interface Formation in Ceramic/Metal Joints”, 2010-2011.
- M. Karimi, “Mechanical Properties of Nanostructured Al-20Si-5Fe alloy”, 2010-2011.
- Sh. Behzadi, “Synthesis and Biocompatibility Assessment of Pyrolytic Carbon” 2009-2010.
- H. Rabifar, “Molecular Simulation Study of Mechanical Behavior of Nanorods and Thin Layers”, 2009-2010.
- A. Molavi, “Shape Controlled Synthesis of Fe@Au Core/Shell Nanoparticles and surface Engineering for Targeted Drug Delivery”, 2009-2010.

- S. Solhjo, “Molecular Simulation Study of Melting, Solidification and Remelting of FCC Metals”, 2009-2010.
- N. Mahmoudi, “Synthesis of a Nanocrystalline Ti-Cr-V-Fe alloy for Hydrogen Storage”, 2008-2009.
- N. Shervin: “Synthesis and Characterization of a CNT/Iron oxide Carriers for Drug Delivery Application: The Role of Fe Concentration” 2007-2008.
- S. Ghaitani: “Synthesis and Characterization of a Novel CNT/Iron oxide Carriers for Drug Delivery Application: The Role of Fe Cations” 2007-2008.
- M. Vahidi: “Rapid Solidification Modeling of Hypereutectic Al-Si-Fe Alloys”, 2008-2009.
- N. Khakbash, “Chemical Vapor Synthesis of TiO<sub>2</sub> Doped Nanoparticles as Near UV-Visible Photocatalyst” 2007-2008.
- F. Jafari, “Synthesis and Characterization of Fe@Au Core/Shell Nanoparticles Coated with Biocompatible Polymer for Drug Delivery Application”, 2007-2008.
- H. Simchi, “Processing of Nanostructured MgH<sub>2</sub>-Ni-Nb<sub>2</sub>O<sub>3</sub> Composite for Hydrogen Storage Application”, 2007-2008.
- M. Naghib nezhad, “Dynamic Molecular Simulation of Nucleation and Growth of Fe-Co Magnetic Particles in Vapor Phase”, 2007-2008.
- A. Lak, “Synthesis of ZnO/TiO<sub>2</sub> Core/Shell Nanorods for Photocatalysis Application”, 2007-008.
- M. Mazaheri, “Processing of Bulk Nanostructured 3Y-TZP Ceramic by Two-Step Sintering”, 2006-2007.
- A. Afshar, “Microstructural Stability and Mechanical Properties of Cu-Al<sub>2</sub>O<sub>3</sub> Nanocomposite”, 2006-2007.
- M.H. Maneshian, “Synthesis of Nanocrystalline W-20%Cu Nanocomposite by High-Energy Mechanical Alloying and Sintering”, 2005-2006.
- H. Arami, “Reactive Mechanical Milling of Al-CuO Powder for In-Situ Fabrication of Nanocrystalline AlCu-Al<sub>2</sub>O<sub>3</sub> Nanocomposite”, 2005-2006.
- M. Shahmohammadi, “Phase Formation during Sintering of Al-Zn-Mg-Cu Alloys”, 2005-2006.
- V. Firouzdar, “Fabrication of M2/316L and M2/17-4PH Stepwise Graded Composite Layers”, 2005-2006.
- P. Kohi, “Effect of Processing Parameters on the Characterization of TiO<sub>2</sub> Nanoparticles Synthesized by CVS Method”, 2004-2005.

- H. Hafizpour, "Compressibility of Al-SiC Composite Powders: The Effect of Reinforcement Particle Size", 2004-2005.
- A. Hossieni Mnazzah, "Creep Behavior of Nanostructured Al-SiC Composite" 2004-2005.
- S. Esmailzadeh, "Foaming Behavior of Al-SiC-TiH<sub>2</sub> Composite Compacts", 2004-2005.
- H. Asgharzadeh, "Hot Deformation of Al6061 and Al6061-SiC Composites Produced by Hot Extrusion", 2003-2004.
- R. Yahossieni, "Simulation of Rapid Solidification of Metal Droplets during Gas Atomization Process", 2003-2004.
- M. Dourandish, "Metal Injection Molding of a High-Strength Low Alloy Steel", 2003-2004.
- R. Ahmadi, "Kinetics and Mechanisms of Nanoparticle Formation in Inert Gas Condensation Process", 2002-2003.
- S. Khalili, "Mechanical Properties of Al-SiC Composites with Architecture Structure", 2002-2003.
- A.H. Tavakoli, "Cyclic Compaction of Al-SiC Composite Powders: The Effect of Reinforcement Volume Fraction", 2002-2003.
- M.H. Fillabi, "Sinter-Joining of P/M Fe-Cu Alloy to Wrought Low Carbon Steel", 2002-2003.
- M. Khakbiz, "Rheological Behavior of PIM 316L-TiC Composite Feedstock", 2002-2003.
- M. Imandar, "Effect of VC and TaC on the Microstructure and Mechanical Strength of WC-10%Co Hardmetal", 2002-2003.

### ***C) BSc thesis***

- D. Hosseini, "Preparation of bioink-polymer scaffolds for polydopamin drug delivery", 2020.
- M. Kohkhezri, "Synthesis of Zr<sub>3</sub>Al<sub>3</sub>C<sub>5</sub> by mechanical ball milling and sintering", 2019.
- F. Khosronezhad, "Hemostatic dressing based on chitosan-PVA-kaolin nanofibers", 2019.
- S. Toufanian, "Light activated drug release in chitosan based wound dressings containing graphene oxide", 2018.
- F. Mazaheri, "Synthesis and investigation of mechanical properties and bioactivity of bone scaffolds based on gelatin/hydroxyapatite nanorods", 2018.
- N. Shafiei, "Synthesis and investigation of mechanical properties and bioactivity of bone scaffolds based on gelatin/hydroxyapatite nanorods", 2018.
- P. Jalilian, "Study of photo-catalytic properties of g-C<sub>3</sub>N<sub>4</sub>", 2018.

- S. S. Mousavi Masouleh, "Fabrication and characterization of nanostructured hybrid graphene/Ni-Cu alloy glucose biosensors", 2016.
- A. Kakavand, "Graphitic carbon nitride nanostructure synthesis and evaluating its photocatalytic activities", 2016.
- M. Heydari, "Fabrication and study of mechanical properties of electrospun core-shell gelatin nanofibers", 2016.
- K. Darabi, "Fabrication and characterization of nanostructured hybrid graphene/Ni-Cu alloy glucose biosensors", 2016.
- A.A. Foroghinasab, "Electrospinning of gelatin nanoparticles as phenytoin sodium's carrier for wound healing", 2016.
- R. Ghaffari, "Encapsulation of curcumin in smart polymeric nanogels for triggerable drug delivery", 2016.
- M. Farivar, "Investigation of emission and photoluminescence properties of Au nanorods-graphene quantum dots hybrid systems", 2016.
- P. Bagheri, "Investigation of emission and photoluminescence properties of Au nanorods-graphene quantum dots hybrid systems", 2016.
- F. Moharramzadeh, "Electrophoretic deposition of chitosan-graphene oxide & glucose oxidase for blood glucose sensors", 2016.
- M.R. Rostami, "Synthesis of Hybrid PbS-Graphene Quantum Dots and Investigation of their Optoelectric and Biologic Properties", 2015.
- M.T. Hashemi, "Synthesis of Hybrid PbS-Graphene Quantum Dots and Investigation of their Optoelectric and Biologic Properties", 2015.
- Z. Razzaghi, "Investigation of CVD Conditions Effects on the Growth of Graphene Nanosheets", 2015.
- F. Rezaee Anaran, "Synthesis and investigation of properties of chitosan/bacteria cellulose/nanodiamonds nanocomposites via an electrospinning method", 2015.
- M. Tamizifar and B. Ghadyani, "Preparation of graphene by CVD method for the synthesis of novel electronic devices", 2015.
- M. Naieni and E. Hosseini, "Synthesis of PbS Quantum Dots and Evaluation of Their Photoelectrical Properties", 2014.
- M. Bahrami, "Fabrication of Functionally Graded YSZ/NiCrAlY Coating on Inconel 738 Superalloy by Spark Plasma Sintering", 2014.

- S. Hassanzadeh, "Fabrication of Schottky PbS Quantum Dot Solar Cells", 2013.
- A.A. Jazayeri, "Synthesis of PbS Quantum Dots by Supercritical Fluid Method", 2013.
- S. Vafai nezhad, "Electrophoretic Deposition of Functionally Graded YSZ-NiO Composites for Solid Oxide Full Cell (SOFC) Anodes", 2011.
- A. Yazdanfar, "Stability of YSZ-NiO Suspensions for Electrophoretic Deposition of Solid Oxide Full Cell (SOFC) Anodes" 2010.
- A. Faizollah, "Thermal Stability of Nanostructured Cu-Al<sub>2</sub>O<sub>3</sub> Nanocomposites", 2010.
- M. Fajamjo: "Flow Modeling of Particle Formation in the Chemical Vapor Synthesis (CVS) Reactor", 2008.
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#### ***D) Presentation in academic conferences***

- 1) Saeidi M, Lee MJ, Okello OFN, Choi SY, Oh SS, Simchi A., (2020): Gold Tetrapod Decorated Three-dimensional Graphene: Synthesis and Characterization, 8th International Conference on Nanostructures (ICNS8), 18-20 November 2020, TEHRAN, IRAN.
- 2) Hasanzadeh Azar M, Mohammadi M, Tabatabaei Rezaei N, Ayneband S, (2020): Enhanced Stability of FAPbI<sub>3</sub> Perovskite Quantum Dots by Silica Coating, 8th International Conference on Nanostructures (ICNS8), 18-20 November 2020, TEHRAN, IRAN.
- 3) Kafili G., Tamjid E., Niknezhad H., Simchi A, (2020): Processing of a temperature responsive human amniotic membrane-derived hydrogel for soft tissue engineering by 3D bioprinting, 14th International Seminar on Polymer Science and Technology (ISPST), 9-12 November 2020, TEHRAN, IRAN.
- 4) Mohandes F, Simchi A., Hybrid Magneto-Fluorescent Nanoparticles for in Vivo Imaging of Tumors in Animal Models, 8th International Conference on Nanostructures (ICNS8), 18-20 November 2020, TEHRAN, IRAN.
- 5) Kafili G, Tamjid E, Niknejad H, Simchi A., (2020): Rheological behavior of amniotic membrane-based hydrogel containing Laponite nanoparticles, 8th International Conference on Nanostructures (ICNS8), 18-20 November 2020, TEHRAN, IRAN.
- 6) Golafshan E, Mashayekhan Sh., Shokrgozar MA., Simchi A., (2020): Nanofibrous piezoelectric PVDF-graphene scaffolds for cardiac tissue engineering, Royan International Twin Congress, Reproduction Biomaterials and Stem Cells, 2-6 September 2020, TEHRAN, IRAN.
- 7) Hatamie A, Hemmati A, Mahmoodi A, Rahmatia R, Nobakht V, Simchi A., (2020): Amperometric glucose sensing based on the binary electrocatalytic effect of nanorod arrays of Co-organic framework grown on porous nickel electrode, 8th International Conference on Nanostructures (ICNS8), 18-20 November 2020, TEHRAN, IRAN.

- 8) Rouien Z, Pishbin F, Jafari H, Simchi A., (2020): Developing of a polymeric coating containing bioactive glass 45S5 on magnesium and investigating its biocompatibility and corrosion resistance, 8th International Conference on Nanostructures (ICNS8), 18-20 November 2020, TEHRAN, IRAN.
- 9) Khiarak BN, Mojaddami M, Simchi A., (2019): Novel electrocatalysts based on 3D graphene and transition metals for water splitting, 4th Iranian Applied Chemistry Conference, 23-25 July 2019, Orumiyeh, West Azerbaijan, Iran
- 10) Lotfi R., Simchi, A., (2019): The role of processing parameters on the synthesis and characterization of few-atomic thick Ti<sub>3</sub>C<sub>2</sub> MXene phase, IITER, 18 th September 2019, Istanbul, Turkey.
- 11) Simchi, A., Mazaheri, B., Aashuri, H. (2018): Graphene/nanorod composites for enzymatic and non-enzymatic electrochemical biosensing: Application to glaucous detection, Carbon 2018 Conference, 1-6 June 2018, Madrid, Spain.
- 12) Tamjid, E., Mahmoudi, N., Simchi, A. (2018): Effect of graphene oxide nanosheets on the physicochemical properties and biological performance of electrospun polymeric nanofibers, Carbon 2018 Conference, 1-6 June 2018, Madrid, Spain.
- 13) Tamjid, E., Mahmoudi, N., Simchi, A. (2018): Graphene-modified temporary skin grafts: Fabrication and in vivo assay, Carbon 2018 Conference, 1-6 June 2018, Madrid, Spain.
- 14) Simchi, A. (2018): 2D nanomaterials for biomedical and biosensing applications, 7th Conference on Nanostructures, 27 Feb. -1 March 2018, Tehran, Iran.
- 15) Angizi, Sh., Simchi, A. (2018): Synthesis and investigation on methyl functionalized boron nitride Nano Sheets, 7th Conference on Nanostructures, 27 Feb. -1 March 2018, Tehran, Iran.
- 16) Soviezi, S., Buki, M.R.R.T., Ghanbari, H., Simchi, A. (2018): Optimization maps for large-area growth of MoS<sub>2</sub> and WS<sub>2</sub> Nanosheets by the Atmospheric Pressure Chemical Vapour Deposition Technique, 7th Conference on Nanostructures, 27 Feb. -1 March 2018, Tehran, Iran.
- 17) Simchi, A., Asgharzadeh, H. (2018) On the development of Al matrix nanocomposites for automotive industry: Compaction, Sintering, hot deformation and mechanical properties, 6th International Conference on Powder Metallurgy for Automotive Parts, 16-18 April 2018, Isfahan, Iran
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- 20) Simchi, A., Mobarhan, M.A. (2016): Hot Deformation Behavior of P/M Al-SiC nanocomposites, Euro PM2016 Congress & Exhibition, 13-15 October (2016). Hamburg, Germany.

- 21) Eslahi, N., Simchi, A. (2016): Thermoresponsive polymeric hydrogels for cartilage tissue engineering, 12th International Seminar on Polymer Science and Technology, 2-5 November 2016, Islamic Azad University, Tehran, Iran.
- 22) Tavakoli, M.M., Simchi, A. (2016): Graphene Nanostructures for Colloidal Quantum Dot Photovoltaic Devices, 7-10 March (2016), Kish Island, Iran
- 23) Mahmoudi, N., Eslahi, N., Simchi, A. (2016): Mechanical and cytotoxicity properties of Chitosan/PVP/GO Electrospun Nanofibers for Skin Tissue Engineering, 7-10 March (2016), Kish Island, Iran.
- 24) Ordikhani, F., Simchi, A. (2014): Electrophoretic Deposition of Chitosan-Graphene oxide Nanocomposite Coatings on Titanium Implants, 5th Conference on Electrophoretic Deposition: Fundamental and Applications, 5-10 October 2014, Hemshtin, Austria.
- 25) Tamjid, E., Simchi, A., Bagheri, R. and Vossoughi, M. (2013): Kinetics of tissue growth in 3D polymer-based nanocomposite scaffolds: Effect of particle size on cell proliferation and differentiation. The first Iranian annual congress on progress in tissue engineering and regenerative medicine, May 2014 (in Persian).
- 26) Mahmoudi, N., Ostadhossein, F. and Simchi, A. (2014): Chitosan/Polyvinyl Pyrrolidone/Nano-layer Graphene Oxide Biocompatible Films for Food Packaging. 5th International Conference on Nanostructures, ICNS5, March 2014.
- 27) Nojoomia, A., Abdolrahima, M., Shahsavari, S., Simchi, A. and Madaah Hosseini, H. (2014): A Novel Nano-hybrid BSA Conjugated Poly-(ethylene oxide) System as an Advanced Gene Transfection Agent. 5th International Conference on Nanostructures, ICNS5, March 2014.
- 28) Ordikhani, F., Ramezani Farani, M. and Simchi, A. (2014): Electrophoretic deposition of drug-eluting graphene oxide/chitosan coatings on orthopedic implants for enhanced bactericidal capacity. 5th International Conference on Nanostructures, ICNS5, March 2014.
- 29) Akbarpour, M. R., Salahi, E., Hesari, F., Simchi, A. and Kim H. S. (2012): Fabrication and Mechanical properties of nanostructured Cu reinforced with SiC nanoparticles. 4th International Congress on Nanoscience and Nanotechnology, ICNN2012, September 2012.
- 30) Ebadzadeh, T., Vaezi, M. R., simchi, A. and Kim, H. S. (2012): Effect of Nano Al<sub>2</sub>O<sub>3</sub> Addition on the Formation of NiTi During Mechanical Alloying, 4th International Congress on Nanoscience and Nanotechnology, ICNN2012, September 2012.
- 31) Akbarpour, M.R., Salahi E., Alikhani, Hesari, F., Simchi, A. and Kim, H.S. (2012): Effect of SiC nanoparticles on dispersion of carbon nanotubes and grain refinement in Cu/MWCNTs composites. The first international and the sixth joint conference of Iranian metallurgical engineering society and Iranian foundrymen society, 2012 (in Persian).
- 32) Farvizi, M., Ebadzade, T., Vaezi, M.R., Simchi, A. and Kim, H. S. (2012): Wear behavior of Al<sub>2</sub>O<sub>3</sub>-NiTi Shape Memory Based Composites. The first international and the sixth joint conference of Iranian metallurgical engineering society and Iranian foundrymen society, 2012.



- 33) Maleki, H., Durães, L. Portugal, A. and Simchi, A. (2012): Synthesis of Fe<sub>3</sub>O<sub>4</sub>@Au Core-Shell Nanoparticles for possible biomedical applications, 4th International Conference on Nanostructures, ICNS4, March 2012.
- 34) Asgharzadeh, H., Bayazid, M Simchi, A. (2012): An Investigation on the Precipitation Hardening of an Ultrafine Grained Al<sub>6063</sub>-Al<sub>2</sub>O<sub>3</sub> Nanocomposite, Euro PM2012, September 2012.
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- 37) Maleki, H., Simchi, A., Imani, M. and M. Mahmoudi (2011): M. Optimized nanoemulsion synthesis of mono-dispersed Fe<sub>3</sub>O<sub>4</sub> magnetic nanoparticles for biomedical applications and cytotoxicity studies. 24th European Conference on Biomaterials, September 2011.
- 38) Tamjid, E., Simchi, A., Kommareddy, K. P., Dunlop, J. Bagheri, R., Vossoughi, M. and Fratzl, P. (2011): In vitro tissue growth in three-dimensional scaffolds of PCL-TiO<sub>2</sub> nanocomposite prepared by an indirect 3D printing process. Euro BioMat 2011, April 2011.
- 39) Mahmoudi, N., Simchi, A. and Kafrou, A. (2010): Hydrogen desorption properties of nanocomposite MgH<sub>2</sub>-TiCr<sub>1.2</sub>Fe<sub>0.6</sub> synthesized by high-energy mechanical alloying. Powder Metallurgy World Congress and Exhibition, PM2010, October 2010.
- 40) Simchi, A. and Godlinski, D. (2010): Direct laser sintering of aluminum matrix composites. Powder Metallurgy World Congress and Exhibition, PM2010, October 2010.
- 41) Simchi, A., Petzoldt, F., Hartwig, T. and Veltl, G. (2010): Sintering of WC-10Co/316L stainless-steel composite parts made by assembling of the PIM parts. Powder Metallurgy World Congress and Exhibition, PM2010, October 2010.
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