

Samaneh Toufanian

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EDUCATION

Sharif University of Technology, Tehran, Iran

(Expected Graduation: Jan 2018)

- Bachelor of Science, Materials Science and Engineering (class rank 6)
- Ranked 1,550 among 1,830,571 candidates in Iran's National University Entrance Examination
- Overall GPA: 17.23/20
- Related courses: Mechanical Behavior of Materials, Quality Control and Nondestructive Testing, Crystallography and Diffraction, Physical Metallurgy Lab, C Programming, Principles of Electrical Engineering, Anatomy and Physiology, Materials Selection, Materials Engineering Kinetics, Principles of Surface Engineering

RESEARCH EXPERIENCE

Electrospinning and Study of Drug Release Behavior in Chitosan-PVP Based Bioactive Wound Dressings Containing Graphene Oxide, CNAM Lab, Sharif University of Technology, Tehran, Iran (Mar 2016-Present)

- Electrospinning of chitosan-PVP nanofibrous mats containing graphene oxide
- Cross-linking the electrospun mats using genipin
- Assessment of fiber morphology, porosity and size distribution using SEM imaging and computer image processing
- Calculated the drug release profile of electrospun nanofibrous mats by measuring concentration of drug in Phosphate Buffer Saline solution using UV-Vis spectrophotometry

ACADEMIC EXPERIENCE

Research and Presentation

- Review on Medical Imaging Techniques: MRI, CT-Scan, BMD and Sonogram
- Glass Fiber Production: Chemistry, Production and Treatment (In English)
Synergy Effect in Graphene and Boron Nitride Reinforced Nano Composites Used in Heat Sinks
- Metal Glass Production Techniques
- PVC Wire Jackets: Production, Safety and Flame Retardant Properties

Projects

- Designed and developed a basic computer game
- Participated in a number of short training sessions in shielded metal arc welding (SMAW), oxyacetylene welding (OAW), brazing, etc.

SKILLS

Technical Skills:

- **Electrospinning**
- **Characterization:** UV-Vis spectroscopy and metallography
- **Mechanical Properties:** impact, static hardness, uniaxial tension and compression, bending, creep etc.
Metal Forming: forge, punch, extrusion, deep drawing, bulging, plain strain compression test, rolling etc.
Software and Programming Languages: C, C++, MATLAB, AutoCAD, SolidWorks, Microsoft Office, Origin, EndNote

Languages: English (Proficient), French (Beginner), Persian (Native)

Language Proficiency Examinations:

- TOEFL (118/120)
- GRE (Verbal Reasoning: 149/170, Quantitative Reasoning 163/170, Analytical Writing 4/6)

Online Education:

Mechanical Behavior of Materials (MITx, an online learning initiative of The Massachusetts Institute of Technology through edX, an online courseware developed by Massachusetts Institute of Technology)

RESEARCH INTERESTS

- Tissue engineering
- Targeted Delivery
- Biomaterials
- BioMEMS

LEADERSHIP AND OTHER EXPERIENCE

2nd Nanomedicine and Nanosafety Conference at Tehran University of Medical Sciences (Nov 2017)

- Cytotoxicity, genotoxicity and hemocompatibility of nanomaterials workshop

24th National and 2nd International Iranian Conference on Biomedical Engineering (Nov 2017)

- Basic Cell culture workshop-(Theoretical and Practical):
 - Principles of cell culture (thawing, counting, expanding, freezing)
 - Cytotoxicity test for biomaterials
 - Encapsulation of Cells
- Advanced Cell culture workshop-(Theoretical and Practical):
 - Principles of stem cell isolation
 - Ethical issues
 - Animal operation
 - Expanding cells

Intern, Tirdad Aron Sazeh, Mamounieh Industrial Estate, Markazi, Iran (Summer 2017)

- Analyzed the quality and physical properties of welded steel structures in quality control Lab
- Devised a report on CNC industrial equipment and progressive dies

3rd PAM International Conference on Application of Nanomaterials in Medicine, Sharif University of Technology, Tehran, Iran (Nov 2016)

- Developed a deeper understanding of MPI, cell targeted drug delivery, and hyperthermia

Scientific Society of Materials Science and Engineering, Sharif University of Technology (Aug 2014-Apr 2016)

- Head of entertainment program committee for the annual welcome ceremony of freshman students as a voluntary member (Aug 2014- Apr 2015)
- Managed logistics and helped devise a planning sheet for the annual welcome ceremony of freshman students and several other gatherings as an elected member (Apr 2015-2016)

Farzcup Robocup Competitions, Farzanegan High School, Tehran, Iran (Mar 2012-Mar 2013)

- Member of technical committee (Mar 2012)
- Assistant referee (Mar 2012) and chief referee (Mar 2013) in Junior RescueA division (Rescue robot competitions designed for children aged 15-18).

Farzanegan 6 Computer Science Workshop "Games and Math", Farzanegan Middle School, Tehran, Iran (Sept 2013)

- Successfully designed and held a workshop introducing algorithms to children aged 13-15
- Introduced sorting algorithms and the concept of cost of calculations in computer programming to children aged 13-15

Farzcode Programming Workshop and Competitions, Farzanegan High School, Tehran, Iran (Dec 2013)

- Member of technical committee
- Oversaw progress in students and provided guidance

Musical Performances

- Participated in multiple Piano and Violin recitals

Personal Interests:

- Playing the Violin and the Piano
- Swimming, playing Tennis and practicing Yoga