Alireza Sadeghi Chahardeh

Graduate Research Assistant, Sharif University of Technology

Address: No. 440, Davoudzadeh Alley, Shohada St.
Rasht, Guilan, Iran

Phone: +(98) (13) 33827166
+(98) (910) 1032653

Email: sadeghi.chahardeh@ut.ac.ir asadeghi.chahardeh@gmail.com

PERSONAL INFORMATION

Nationality: Iranian
Date of Birth: May 29 , 1989

EDUCATION

- **2012-2015**, Master of Science in Applied Mechanics in Manufacturing Processes, **Sharif University of Technology**, Tehran, Iran, GPA: **17.16/20 (3.66/4)**
  Thesis Topic**: Experimental study of high strain rate effects on steel sheet forming**
  Supervisor **: Professor Reza Naghdabadi (Thesis mark: 19.5/ 20)**

  - ✓ In this research, experimental investigation the influence of the strain rate on the forming properties of some industrial sheet metals used in Automotive and Aerospace industries. First, Split Hopkinson Tensile Bar (SHTB) experiments are manufactured to determine the effect of the strain rate on the materials' stress-strain curves. Then, the SHTB results are used to model the constitutive behaviour of the metal sheets using the phenomenological Johnson-Cook model. Finally, forming limit diagrams (FLDs) are calculated using the Marciniak-Kuczynski method. The results clearly show that the effect of the strain rate of forces and energies involved in a forming process, and the forming limits are non-negligible and strongly material dependent.

- **2007-2012** Bachelor of Science in Solid Mechanics, Mechanical Engineering, **Guilan University**, Guilan, Iran
  GPA: 15.76/20.0 (3.18/4)
  Last two years of B.Sc. GPA**: 17.1/20 – Top Student** (**3.63/ 4)** based on WES Conversion

OBJECTIVE

To obtain a full-time position leading to a Ph.D. degree in the field of **Solid Mechanical Engineering.**

HONORS AND AWARDS

1. Ranked **1st** among accepted Ph.D. candidates in University of Tehran, September 2015.
2. Ranked **14th** in Doctoral Entrance Exam, March 2015.
3. Ranked **1st** among Applied Mechanics in Manufacturing Processes Students at Sharif University of Technology.
4. Ranked **36th** in M.Sc. Entrance Exam among **31860** participants, June 2012
   Note: M.Sc Entrance exam is a nation-wide competition between all mechanical engineering bachelor students who want to study M.Sc. It is one of the most important national exams.
5. Ranked **4th** in the national Mechanical Engineering Olympiad- First round, April 2012.
   Note: It was a scientific competition between Mechanical engineering top students in northern part of Iran.
6. Ranked **12th/ 110** among Mechanical Engineering Students at Guilan University, Rasht, Iran, 2012.
7. Ranked **1%** in Nation-wide university entrance exam (Konkoor), 2007.
8. Ranked **1st** in a Physics Olympiad among high school students, Tehran, Iran, 2004.
9. Ranked **1st** in **Special talents** high school (GPA: 19.06/20), Molla Sadra, Tehran, Iran, 2004-2007.

RESEARCH INTERESTS

- **Experimental Study of behavior of metals**
- **Continuum Mechanics:** Non-Classical theories, Theory of Growth Mechanics
- **Mechanics of energy storage materials:** Lithium-ion batteries
- **High strain rate deformation:** Experimental and Theoritical Study
- **Smart Materials:** Shape Memory Alloy, Smart Hydrogel

PUBLICATION

1. **Sadeghi Chahardeh, A.**, Rasht-Behesht, S. H., Naghdabadi, R., "Modeling diffusion-induced stress in nanowire electrodes of Lithium ion battery via strain gradient theory", Submitted to Journal of Power Sources.

2. **A. Sadeghi Chahardeh**, R. Naghdabadi, " Experimental Study of Dynamic Behavior of C10200 by Split Hopkinson Tensile Bar Test", The Bi-Annual International Conference on Experimental Solid Mechanics and Dynamics (X-Mech-2016), Tehran, February 16-17, 2016.

3. **A. Sadeghi Chahardeh**, R. Naghdabadi, " Experimental study of high strain rate effects on 1010 steel sheet forming", The Bi-Annual International Conference on Experimental Solid Mechanics and Dynamics (X-Mech-2016), Tehran, February 16-17, 2016.

RESEARCH & PROJECT

1. Design, manufacture of **Air Conditioning Laboratory Unit, Heat Pump Unit, Refrigeration Laboratory Unit, Cooling Tower Laboratory Unit** in Sazepardazan Morvarid Jonoub Company, Tehran, Iran, summer & fall 2014.

2. Design, simulation and manufacture of **Split Hopkinson Tensile Bars (SHTBs) for testing sheet metals under high strain rate deformation** under supervision of Prof. Naghdabadi in M.S project, Sharif University of Technology, Tehran, Iran, 2013-2014.

3. Design, simulation and manufacture of **Clamping Device for Split Hopkinson Tension Bars using Shape Memory Alloy** under supervision of Prof. Naghdabadi in M.S. project, Sharif University of Technology, Tehran, Iran, 2014.

4. Advance research about Non-Classical theories of Continuum Mechanics such as **micromorphic theory, Micropolar theory, couple stress theory, strain gradient elasticity** and how they are related to each other under supervision of Prof. Naghdabadi, Sharif University of Technology, Tehran, Iran, 2013.

5. Advance research about **sheet metal forming and numerical method for plot Forming Limit Diagrams (FLDs) via M-K analysis** under supervision of Prof. Naghdabadi in M.S project, Sharif University of Technology, Tehran, Iran, fall 2013.

6. Advance research about **Micropolar elasticity** under supervision of Prof. Naghdabadi in the Elasticity course, Sharif University of Technology, Tehran, Iran, spring 2013.

7. Simulation and analysis of **crack propagation in sheet metal with holes** via **ABAQUS** under supervision of Prof. Farrahi in the Fracture Mechanics course, Sharif University of Technology, Tehran, Iran, fall 2013.

8. Advance research about **interatomic potential for metals and calculation of strain gradient elastic constants** under supervision of Prof. Naghdabadi in the Nano-Mechanics course, Sharif University of Technology, Tehran, Iran, fall 2013.

9. Simulation and analysis of **extrusion process** via **ABAQUS** under supervision of Prof. Asempour in the Metal Forming course, Sharif University of Technology, Tehran, Iran, fall 2012.

10. Advance research about **Invariant theories and its application in constitutive equations** under supervision of Prof. Naghdabadi in the Continuum Mechanics course, Sharif University of Technology, Tehran, Iran, fall 2012.

11. **Multi-objective optimization of vehicle suspension via Genetic Algorithms (GLs)** under supervision of Dr. A. Jamali in B.S project, Guilan University, Rasht, Iran, fall 2011.

HONERARY MEMBERSHIP

- Member of Iranian Society of Mechanical Engineering (ISME), 2014– Present.

TEACHING AND RESEARCH EXPERIENCE

RESEARCH ASSISTANCE

- Research Assistant, Sharif University of Technology, Tehran, Iran. 2012-Present

TEACHING ASSISTANCE

- Taeching Assistant (TA), **Strength of Materials Laboratory**, 2016, Instructor: Prof. Safarabadi (University of Tehran)
- Graduate Teaching Assistant (TA), **Advanced Engineering Mathematics**, 2014, Instructor: Prof. Fallah Rajabzadeh (Sharif University of Technology)
- Graduate Teaching Assistant (TA), **Continuum Mechanics**, 2014, Instructor: Prof. Naghdabadi (Sharif University of Technology)
- Teaching Assistant (TA), **Impact Laboratory**, 2013, Instructor: Prof. Naghdabadi (Sharif University of Technology)
- Teaching Assistant (TA), **Engineering Mathematics**, 2011, Instructor: Dr. Ansari (Guilan University)

WORK EXPERIENCE

- English and LaTex editor of Journal of Nonlinear Science and its Application & Jounral of Mathematics and Computer Science, fall 2015 up to now.
- Sazeh Pardazane Morvaride Jonoub Company, Summer & Fall 2014, Tehran, Iran, As designer of laboratory equipment
- Modarresan Sharif Publication, 2012-Present, Tehran, Iran, As an exam maker in soild mechanics Engineering.
- Iranradiator company, Summer 2011, Rasht, Iran, As R&D engineer.

INDUSTRAIL SKILL

- ✓ Electric Welding skill
- ✓ Ability to work with a lathe

COMPUTER AND PROGRAMMING SKILLS

- **Professional**
  - ✓ ABAQUS, ANSYS, LS-DYNA
  - ✓ Solid Work, Auto CAD
  - ✓ MATLAB, MAPLE
  - ✓ LaTeX
  - ✓ Microsoft Office 2013

- **Familiar**
  - ✓ COMSOL
  - ✓ AutoDesk Inventor
  - ✓ C/ C++

REPRESENTATIVE COURSES

- **Master of Science:**

  - ✓ Continuum Mechanics (with Prof. Naghdabadi)
  - ✓ Elasticity (with Prof. Naghdabadi)
  - ✓ Finite Element methods (with Prof. Movahedi)
  - ✓ Viscoelasticity (with Prof. Firouzbakhsh)
  - ✓ Nano-Mechanics (with Prof. Naghdabadi)
  - ✓ Fracture Mechanics (with Prof. Farrahi)
  - ✓ Metal Forming (with Prof. Asempour)
  - ✓ Introduction to MEMS and NEMS (with Dr. Moghimi Zand)

- **Bachelor of Science:**

  - ✓ Applied plasticity (with Dr. Basti)
  - ✓ Strength of Material (with Dr. Dadgar-Rad)
  - ✓ Variation Methods in Applied Mechanics (with Dr. Dadgar-Rad)
  - ✓ Composite Material (with Dr. Falahatgar)
  - ✓ Optimization (with Dr. Jamali)

HOBBIES

- Sports: Volleyball, Body building
- Science: Mathematics, Psychology
- Reading Novel
- Photography

REFERENCES

Prof. Reza Naghdabadi, Department of Mechanical Engineering and Institute for Nano Science and Technology, Sharif University of Technology, Tehran, Iran (naghdabd@sharif.edu)

Dr. Farzam Dadgar-Rad, Department of Mechanical Engineering, Guilan University, Rasht, Iran (dadgar@guilan.ac.ir)

Dr. Famida Fallah Rajabzadeh, Department of Mechanical Engineering, Sharif University of Technology, Tehran, Iran (fallah@sharif.ir)

Dr. Jamal Arghavani, Department of Mechanical Engineering, Sharif University of Technology, Tehran, Iran (arghavani@sharif.edu)

Dr. Hashem Mazaheri, Department of Mechanical Engineering, Buali Sina University, Hamedan, Iran (h.mazaheri@basu.ac.ir)

- Additional Information will be available upon request