Souhayl Sadik, PhD, Eng **Curriculum Vitae**

Postdoctoral Researcher
Mechanical Metamaterials and Soft Matter Group
Solid Mechanics and Materials Engineering
Department of Mechanical and Production Engineering,
Aarhus University

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Nationality: Moroccan

Date of birth: 10.07.1987

Research Interests

Shape-changing Structures; Soft Materials; Origami/Kirigami Mechanics; Mechanical Metamaterials; Additive Manufacturing; Morphoelasticity; Biomechanics

Disciplines

Solid Mechanics; Continuum Mechanics; Structural Mechanics; Engineering Mechanics; Geometric Mechanics; Nonlinear Elasticity; Anelasticity; Applied Mathematics; Mathematical Modelling

Education

Aug 2012 – Dec 2016 **Doctor of Philosophy, Engineering Science and Mechanics**
Thesis: "Referential and Spatial Evolutions in Nonlinear Elasticity"
Advisor: Professor Arash Yavari
College of Engineering, **Georgia Institute of Technology**, Atlanta, GA, USA

Aug 2012 – May 2014 **Master of Science, Mathematics**
School of Mathematics, **Georgia Institute of Technology**, Atlanta, GA, USA

Sep 2010 – May 2012 **Master of Engineering, Civil Engineering**
Ecole des Ponts ParisTech and **Ecole Centrale Paris**, Paris, France

Sep 2007 – Jul 2010 ***Diplôme d'Ingénieur*, Civil Engineering**
Ecole Hassania des Travaux Publics, Casablanca, Morocco

Sep 2005 – Jul 2007 ***Classes Préparatoires*, Mathematics, Physics, and Engineering Sciences**
Lycée Mohammed V, Béni Mellal, and **Lycée Moulay Youssef**, Rabat, Morocco

Professional Experience

Since Aug 2019 **Postdoctoral Researcher**
Mechanical Metamaterials and Soft Matter Group
Department of Mechanical and Production Engineering, **Aarhus University**, Aarhus, Denmark

Feb 2019 – May 2019 **Dresden Junior Fellow**
Institute of Scientific Computing
Faculty of Mathematics, **TU Dresden**, Dresden, Germany

Jan 2017 – Jan 2019 **Postdoctoral Research Fellow**
Pattern Formation, Energy Landscapes, and Scaling Laws Group
Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany

Aug 2012 – Dec 2016 **Graduate Research Assistant (*Fulbright* Scholar)**
Geometric Solid Mechanics Group
College of Engineering, **Georgia Institute of Technology**, Atlanta, GA, USA

Mar 2010 – May 2012 **Structural Engineer**,
Dams and Hydroelectric Projects
Tractebel Engineering France, Paris, France

Teaching Experience

Since Jan 2021 **Instructor**, Department of Mechanical and Production Engineering, **Aarhus University**, Aarhus, Denmark
- Mathematical Modelling for Applications in Science and Engineering [graduate]
- Mechanics and Physics [undergraduate]

Aug 2019 – Dec 2020 **Co-instructor**, Department of Engineering, **Aarhus University**, Aarhus, Denmark
- Mathematical Modelling for Applications in Science and Engineering (Autumn 2019, Autumn 2020) [graduate]

Aug 2013 – May 2016 **Teaching Assistant**, College of Engineering, **Georgia Institute of Technology**, Atlanta, GA, USA
- Mechanics of Deformable Bodies (Fall 2013) [undergraduate]
- Structural Analysis (Spring 2014) [undergraduate]
- Advanced Strength of Materials (Fall 2014) [graduate]
- Advanced Mathematics for Engineers I & II (Fall 2015, Spring 2016) [graduate]

Sep 2009 – Jun 2010 Independent **High School Tutor**, Mathematics, Physics, and Chemistry, Paris, France

Journal Publications

9. **S. Sadik**, M. G. Walker, & M. A. Dias, On Local Kirigami Mechanics II: Stretchable Creased Solutions https://arxiv.org/abs/2109.03019 (September 2021)
8. **S. Sadik** & M. A. Dias, On Local Kirigami Mechanics I: Isometric Conical Solutions ***Journal of the Mechanics and Physics of Solids***, 151 (Feb 2021)
7. F. Sozio, M. Faghih Shojaei, **S. Sadik** & A. Yavari, Nonlinear Mechanics of Thermoelastic Accretion ***Zeitschrift für Angewandte Mathematik und Physik***, 71(3) (May 2020)
6. **S. Sadik** & A. Yavari, Small-on-Large Geometric Anelasticity ***Proceedings of the Royal Society A***, 472(2195) (Nov 2016)
5. A. Yavari, A. Ozakin, & **S. Sadik**, Nonlinear Elasticity in a Deforming Ambient Space ***Journal of Nonlinear Science***, 26(6) (Jul 2016)
4. **S. Sadik**, A. Angoshtari, A. Goriely, & A. Yavari, A Geometric Theory of Nonlinear Morphoelastic Shells ***Journal of Nonlinear Science***, 26(4) (May 2016)
3. A. Golgoon, **S. Sadik**, & A. Yavari, Circumferentially-Symmetric Finite Eigenstrains in Incompressible Isotropic Nonlinear Elastic Wedges ***International Journal of Non-Linear Mechanics***, 84 (Apr 2016)
2. **S. Sadik** & A. Yavari, On the Origins of the Idea of the Multiplicative Decomposition of the Deformation Gradient ***Mathematics and Mechanics of Solids***, 22(4) (Oct 2015)
1. **S. Sadik** & A. Yavari, Geometric Nonlinear Thermoelasticity and the Time Evolution of Thermal Stresses ***Mathematics and Mechanics of Solids***, 22(7) (Sep 2015)

Conference & Seminar Presentations

- Invited Talks:
  - A Geometric Theory of Nonlinear Morphoelastic Shells, **NUI Galway Applied Mathematics Seminar**, National University of Ireland Galway, Galway, Ireland, September 2018
  - Nonlinear Elasticity in a Deforming Ambient Space, **TUD IWR Seminar**, Institute of Scientific Computing, Technische Universität Dresden, Dresden, Germany, November 2017

    - A Geometric Theory of Nonlinear Morphoelastic Shells, **SUNY Applied Mathematics Seminar**, SUNY Polytechnic Institute**,** Utica, NY, USA, April 2016
- Contributed Talks:
    - On Local Kirigami Mechanics, **25th International Congress of Theoretical and Applied Mechanics**, Online, August 2021
    - On Local Kirigami Mechanics, **SIAM Conference on Mathematical Aspects of Materials Science**, Online, May 2021
    - E-cone Mechanics, **ASCE Engineering Mechanics Institute International Conference**, Mechanics of Thin Sheets, from Origami and Kirigami to Creasing and Wrinkling, Online, April 2020
    - Kirigami Mechanics, **iMAT Student and Postdoc Seminar Meeting**, Aarhus University Centre for Integrated Materials Research, Aarhus, Denmark, November 2019
    - Nonlinear Elasticity on Abstract Manifolds, **MPI Seminar**, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, March 2017
    - Nonlinear Elasticity in a Deforming Ambient Space, **GaTech Structural Engineering Seminar Series**, Georgia Institute of Technology, Atlanta, GA, USA, February 2016
    - A Geometric Theory of Nonlinear Morphoelastic Shells, **GaTech Structural Engineering Seminar Series**, Georgia Institute of Technology, Atlanta, GA, USA, October 2015
    - Geometric Nonlinear Thermoelasticity, **53rd meeting of the Society for Natural Philosophy**, University of Calgary, Calgary, AB, Canada, August 2015
    - Geometric Nonlinear Thermoelasticity, **GaTech Structural Engineering Seminar Series**, Georgia Institute of Technology, Atlanta, GA, USA, February 2015
- Poster Presentations:
    - Nonlinear Morphoelastic Shells, **Workshop on Mathematics of Thin Structures**, Faculty of Mathematics, Technische Universität Dresden, Dresden, Germany, September 2018
    - Nonlinear Morphoelastic Shells, **NYU-Oxford Workshop on Mathematical Models of Defects and Patterns**, Courant Institute of Mathematical Sciences, New York University**,** New York City, NY, USA, January 2016

Academic Service

- Peer-review referee for: Fatigue & Fracture of Engineering Materials & Structures; Journal of Elasticity; Mathematics and Mechanics of Solids; Multiscale Modeling and Simulation; Philosophical Transactions of the Royal Society A; Physical Review B; Physical Review E; Science Advances
- Reporter for Mathematisches Forschungsinstitut Oberwolfach**,** Material Theories Workshop, July 2017
- Host of the “Mechanics Journal Club,” Department of Mechanical and Production Engineering, Aarhus University, since September 2019
- Co-host of the “AU Science Lunch,” Department of Engineering, Aarhus University, Spring 2020