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Postdoctoral Researcher	Navitas, 05.091
Mechanical Metamaterials and Soft Matter Group	Inge Lehmanns Gade 10
Solid Mechanics and Materials Engineering	8000, Aarhus, Denmark
Department of Mechanical and Production Engineering,	Phone: +45 52 60 10 61
Aarhus University	E-mail: <a href="mailto:souhayl.sadik@gmail.com">souhayl.sadik@gmail.com</a>
Nationality: Moroccan	web: <a href="http://souhayl-sadik.netlify.app">souhayl-sadik.netlify.app</a>
	Date of birth: 10.07.1987

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**Research Interests**

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

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**Disciplines**

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

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**Education**

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Aug 2012 – Dec 2016	<b>Doctor of Philosophy, Engineering Science and Mechanics</b> Thesis: “ <a href="#">Referential and Spatial Evolutions in Nonlinear Elasticity</a> ” Advisor: Professor Arash Yavari College of Engineering, <b>Georgia Institute of Technology</b> , Atlanta, GA, USA
Aug 2012 – May 2014	<b>Master of Science, Mathematics</b> School of Mathematics, <b>Georgia Institute of Technology</b> , Atlanta, GA, USA
Sep 2010 – May 2012	<b>Master of Engineering, Civil Engineering</b> <b>Ecole des Ponts ParisTech</b> and <b>Ecole Centrale Paris</b> , Paris, France
Sep 2007 – Jul 2010	<b>Diplôme d'Ingénieur, Civil Engineering</b> <b>Ecole Hassania des Travaux Publics</b> , Casablanca, Morocco
Sep 2005 – Jul 2007	<b>Classes Préparatoires, Mathematics, Physics, and Engineering Sciences</b> <b>Lycée Mohammed V</b> , Béni Mellal, and <b>Lycée Moulay Youssef</b> , Rabat, Morocco

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**Professional Experience**

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Since Aug 2019	<b>Postdoctoral Researcher</b> Mechanical Metamaterials and Soft Matter Group Department of Mechanical and Production Engineering, <b>Aarhus University</b> , Aarhus, Denmark
Feb 2019 – May 2019	<b>Dresden Junior Fellow</b> Institute of Scientific Computing Faculty of Mathematics, <b>TU Dresden</b> , Dresden, Germany
Jan 2017 – Jan 2019	<b>Postdoctoral Research Fellow</b> Pattern Formation, Energy Landscapes, and Scaling Laws Group <b>Max Planck Institute for Mathematics in the Sciences</b> , Leipzig, Germany
Aug 2012 – Dec 2016	<b>Graduate Research Assistant (Fulbright Scholar)</b> Geometric Solid Mechanics Group College of Engineering, <b>Georgia Institute of Technology</b> , Atlanta, GA, USA

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

### Teaching Experience

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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

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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

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- 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, **53<sup>rd</sup> 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

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- 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