

Najmul H. Abid

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Education

- [2015-Present] **PhD Mechanical Engineering**
McGill University, Canada
Assistantship: McGill Engineering Doctoral Award (*MEDA*)
Advisor: Prof. Francois Barthelat
- [2013-2015] **MSc Mechanical Engineering**
Masdar Institute of Science and Technology, UAE (*Affiliated with MIT*)
Assistantship: Masdar Graduate Research Assistantship
Advisor: Prof. Rashid Abu Al-Rub
Thesis: Exploring salient microstructural features leading to simultaneous enhancements in strength and deformability of dual-phase steels: Microstructural-based computational predictions
- [2010-2013] **BEng (Hons) Mechanical Engineering***
University of Nottingham Malaysia Campus
Scholarship: Nottingham's High Achiever's Scholarship
Advisor: Prof. Hazem Demerdash
Thesis: Non-Smooth Behavior Simulation of a Rotor System (**Awarded IMechE Best Project Award**)

* Graduated as 3rd rank out of 65 students

Work Experience

- [Sept 2015-Present] **Graduate Research Assistant (RA)**
McGill University, Canada
Supervisor: Prof. Francois Barthelat
- [Sept 2013-June 2015] **Graduate Research Assistant (RA)**
Masdar Institute of Science and Technology, UAE
Supervisor: Prof. Rashid Abu Al-Rub
Research Objective: Increasing the strength and ductility simultaneously of advanced high strength steels (AHSS) to develop the 3rd generation AHSS through using a higher-ordered gradient plasticity-damage model on virtually generated microstructures.
- [Feb 2015-May 2015] **Teaching Assistant (TA)**
Masdar Institute of Science and Technology, UAE
Course: FDN432 Differential Equations and Linear Algebra
Course Instructor: Prof. Hamid Abderrahmane
- [Sept 2014-Dec 2014] **Teaching Assistant (TA)**
Masdar Institute of Science and Technology, UAE
Course: MEG511 Advanced Engineering Mathematics
Course Instructor: Prof. Rashid Abu Al-Rub
- [July 2011-Sept 2011] **Co-op Training**
National Petrochemical Industrial Company, Saudi Arabia
Placement: Mechanical Maintenance Department

Professional Affiliation

1. **Institute of Mechanical Engineering (IMechE) since 2010**
2. **American Society of Mechanical Engineering (ASME) since 2013**

Technical Training

- Gas Cutting & Arc Cutting
- MEDIC Basic Adult First Aid
- Basic SEM (*Quanta 250*)
- Industrial Safety (*NATPET*)
- Basic TEM (*Tecnai T20*)
- Electron Backscatter Diffraction (*EBSD*)

Journal Papers

1. **Abid, N.H.**, Abu Al-Rub, R.K., Palazotto, A.N., "Microstructural Modeling of the Effects of Martensite Particle Size and Ferrite Grain Boundaries on the Overall Mechanical Behavior of Dual Phase Steel" (*Submitted*)
2. **Abid, N.H.**, Abu Al-Rub, R.K., Palazotto, A.N., "Micromechanical Finite Element Analysis of the Effects of Martensite Morphological Distribution on the Overall Mechanical Behavior of Dual Phase Steel" (*Submitted*)
3. Abu Al-Rub R.K., **Abid NH.**, Ettehad M., Palazotto A.N., "Microstructural Modeling of Dual Phase Steel Using a Higher-Order Gradient Plasticity-Damage Model", *Applied Mechanics and Materials*, Vol. 784, pp. 119-128, Aug. 2015
4. **Abid, N.H.**, Abu Al-Rub, R.K., Palazotto, A.N., 2015. Computational Modeling of the Effect of Equiaxed Heterogeneous Microstructures on Strength and Ductility of Dual Phase Steels. *Computational Materials Science* 103, 20-37.

Conference Proceedings

1. Abu Al-Rub, R.K., **Abid, N.H.**, Palazotto, A.N., "Micromechanical Analysis of the Effects of Martensite Complex Morphology on the Overall Mechanical Behavior of Dual Phase Steel" *Proceedings of the ASME 2015 International Mechanical Engineering Congress & Exposition*, USA, 2015
2. **Abid, N.H.**, Abu Al-Rub, R.K., "Micromechanical Modeling of Size Effect on Strength and Ductility of Dual-Phase Steels" *Proceedings of the 1st Graduate Student Research Conference*, UAE, 2015
3. Abu Al-Rub, R.K., **Abid, N.H.**, Ettehad, M., Palazotto, A.N., "Microstructure Modeling of Dual Phase Steel using a Higher-Order Gradient Plasticity-Damage Model" *Proceedings of the 2nd International Conference on Damage Mechanics*, France, 2015
4. Abu Al-Rub, R.K., Ettehad, M., Palazotto, A.N., **Abid, N.H.**, "Non-Local Computational Approach of Inelasticity and Fracture of Micro/Nanostructured Advanced Higher Strength Steels" *Proceedings of the 5th International Congress on Computational Mechanics and Simulation*, India, 2014
5. **Abid, N.H.**, Abu Al-Rub, R.K. "Computational Modeling of the Effect of Heterogeneous Microstructure on Strength and Ductility of Dual Phase Steels" *Proceedings of the ASME 2014 International Mechanical Engineering Congress & Exposition*, Canada, 2014
6. **Abid, N.H.**, Kolo, I., Janjereh, I., "CFD Study of Wind, Thermal, Solar, and Pollutant Effects on Masdar City", *Proceedings of the 19th Australasian Fluid Mechanics Conference*, Australia, 2014.

Conference Reviewer

1. **American Society of Mechanical Engineering-International Mechanical Engineering Congress & Exposition 2015** (ASME-IMECE 2015) Track 12 Mechanics of Solids, Structures and Fluids
2. **American Society of Mechanical Engineering-International Mechanical Engineering Congress & Exposition 2014** (ASME-IMECE 2014) Track 12 Mechanics of Solids, Structures and Fluids

Computer Skills

- **Abaqus** (*Finite Element Software*)
- **Matlab** (*Programming Language*)
- **Fortran** (*Programming Language*)
- **Pro|Mechanica** (*Finite Element Analysis*)
- **Pro|Engineering** (*CAD*)
- **SolidWorks** (*CAD*)
- **GeoMagic** (*CAD*)
- **Ubuntu** (*Operating System*)
- **Gambit** (*Meshing*)
- **Ansys-Fluent** (*CFD*)
- **Granta's Material Inspiration** (*Material Analysis*)

Selected Achievements

- Awarded **McGill Engineering Doctoral Award** at McGill University for PhD program (2015-2018)
- Awarded **Differential Fee Waiver (DWF)** at McGill University for PhD program (2015-2016)
- Awarded **Roger Boudreault Fellowship** at McGill University for PhD program (2015-2016)
- Awarded **McConnell Memorial Fellowship** at McGill University for PhD program (2015-2016)
- Awarded **Graduate Excellence Award** at McGill University for PhD program (2015-2016)
- Awarded **Graduate Research Assistantship** at Masdar Institute for master's program (2013-2015)
- Awarded **Nottingham Higher Achievers Scholarship** for Bachelor's Program (2010-2013)
- Ranked **3rd out of 65** students for bachelor's degree. (2010-2013)
- Awarded **IMechE Best Project Award** for my undergraduate final year project. (2013)