Hakim NACEUR

Professor, Computational Mechanics

Contact Information

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Education

- Since 2020 Professor, Computational Mechanics, INSA Hauts-de-France
- Sep. 2009 Professor, Computational Mechanics, Université Polytechnique Hauts-de-France
- Nov. 2007 H.d.R. Mechanical Engineering, Université de Technologie de Compiègne
- Sep. 1998 Ph.D. Mechanical Engineering, Université de Technologie de Compiègne
- June 1994 M.Sc. Computational Structural Mechanics, Université Pierre & Marie Curie
- June 1993 B.Eng. Mechanical Engineering, Université de Batna

Honors-Awards

- Since 2015 1st Class Professor, Université Polytechnique Hauts-de-France
- 2014-2021 Doctoral bonus for research and advising (PEDR) by the French Ministry of Research
- 2009-2013 Scientific Excellence allowance (PES) by the French Ministry of Research
- Jan. 2008 Qualified by the National Council of Universities to be a Full Professor
- Sep. 05-09 Doctoral bonus for research and advising (PEDR) from the French Ministry of Research

Research Areas

- Modeling of the impact of Composite Shell Structures using Meshless Methods
- Homogenization techniques and multi-scale approaches in crash and impact
- Biomechanical modeling of hard tissues with porosity for energy dissipation in shocks
- Numerical Modeling & Optimization of sheet metal forming Processes

To date: 76 papers in Int. Journals, 9 books chapters, 96 papers in Int. Conferences.
H-index= 20 (source: Google Scholar, Jan. 2021)

Recent Research & Academic Activities

- Mar. 2020: Head of Mechanical Engineering Deprtment, INSA Hauts de France. Staff of 90 teachers/researchers, 3 Engineering options et 8 masters and 1 international master.
- Member of the scientific committee of the International Conference on Computational Plasticity COMPLAS'2021, 7-10 sept 2021, Barcelona, Spain. http://congress.cimne.com/complas2021
- Member of the scientific committee of the international conference on Advanced Materials, Mechanics and Manufacturing "A3M", March 25 –27, 2021, Sfax, Tunisia
- Keynote lecture, on "Advances in Particle Methods for the Nonlinear Computational Modeling in Structural Mechanics", Broad Exposure to Science and Technology (BEST'2019), 7-8 August, 2019 Bali, Indonesia. https://best.untirta.ac.id
- Session Chairman in ICOMP'2018: 1st Int. Conf. on Theoretical, Analytical and Computational Methods for Composite Materials and Composite Structures, Wuhan, China, 23-25 May, 2018. Invited sessions: 7.1 and 7.2 "Impact problems on composite structures".
- Keynote lecture, on "Numerical modeling of low-velocity impact of multilayered structures using the nonlocal peridynamics". International Symposium on Dynamic Response and Failure of Composite Materials DRAF'2018, Ischia, Naples, Italy, June 12-15, 2018.
- Scientific responsible of organization of the Summer School at the Université Polytechnique Hauts-de-France, from 2nd-27th July 2018, entitled : "Towards Intelligent & Sustainable Optimization of Transport Systems".

Teaching graduate courses

- Mechanics - Energetics
  - Structural Modeling by the Finite Element Method (Spring, 8th semester): http://naceurh.free.fr/xu42
  - Nonlinear Structural Modeling by Finite Element Method (Fall, 9th semester): http://naceurh.free.fr/c52
  - Fracture Mechanics and Assembly Modeling (Fall, 9th semester): http://naceurh.free.fr/a72
  - Design of Experiments in Mechanics (Fall, 9th semester) : http://naceurh.free.fr/v61
- Mechatronics
  - Initiation to the Finite Element Method (Spring, 8th semester) : http://naceurh.free.fr/xu33

Supervision of Scholarly Work

- 19 Ph.D. completed
- 3 Ph.D. in progress
  - 2018-2021 Responsibility 50%, PhD Student: Sadok RIDENE, thesis "Crash modeling of high-voltage cable connectors in electric vehicles", Collaboration with company Daimler AG (Germany).
  - 2020-2023 Responsibility 100%, PhD Student: Maxime CRESSIN, thesis "Numerical modeling of thermal flux fields on molds during glass forming", Collaboration with company SAVERGLASS (60).
  - 2021-2024 Responsibility 100%, PhD Student: Tuan TRAN, thesis "Phase-field modeling of damage and fracture under impact of thin structures", Collaboration with Danang University of Technology (DUT).
- Post-doc in progress (2)
  - 2019-2021 Supervision of Dr. Ruqing BAI, subject: "Modeling and optimization of forming paths in additive manufacturing to improve energy absorption".
  - 2020-2021 Supervision of Dr. Yasin AMANI, subject: "Numerical modeling of the impact during a fall on the human skeleton taking into account the variability between individuals", Projet ELSAT 2020.
- 1999-today Supervision of more than a hundred Master's Degree theses.

Recent Publications

1. J Li, G Wang, J Zhan, S Liu, Y Guan, H Naceur, D Coutellier, J Lin (2021) "Meshless SPH analysis for transient heat conduction in the functionally graded structures", Composites Communications 24, 100664, DOI:j.coco.2021.100664
2. J Li, G Wang, Y Guan, G Zhao, J Lin, H Naceur, D Coutellier (2021) "Meshless analysis of bi-directional functionally graded beam structures based on physical neutral surface", Composite Structures 259, 113502, DOI:j.compstruct.2020.113502
3. J Zhan, J Li, G Wang, Y Guan, G Zhao, J Lin, H Naceur, D Coutellier (2021) "Review on the performances, foaming and injection molding simulation of natural fiber composites", Polymer Composites 42 (3), 1305-1324, DOI:10.1002/pc.25902
4. LI Jiao, W Guangchun, LIU Shuai, LIN Jun, G Yanjin, Z Guoqun, H. Naceur (2021) "Efficient thermomechanical analysis of functionally graded structures using the symmetric SPH method", Case Studies in Thermal Engineering, 100889, DOI:j.csite.2021.100889
5. W Arif, H Naceur, S Miran, N Leconte, E Markiewicz (2021), "Fast and accurate multi-material model for the prediction of laser welded structural response", Engineering Computations, DOI:EC-04-2020-0205
6. J Rahmoun, H Naceur, H Morvan, P Drazetic, C Fontaine, PE Mazeran (2020) "Experimental characterization and micromechanical modeling of the elastic response of the human humerus under bending impact", Materials Science and Engineering: C 117, 111276, DOI:j.msec.2020.111276
7. THT Tran, J Rahmoun, H Naceur, ND Son (2020), "Buckling and post-buckling analysis of frame structures using a free-locking beam-SPH model", The 11th International Conference on Computational Methods (ICCM2020), Virtual Conference, August 9-12, 2020, Vietnam
8. J Rahmoun, H Naceur, P Drazetic, C Fontaine (2020) "Micromechanical modeling of ductile fracture of human humerus", Journal of Mechanical Engineering and Sciences 14 (2), 6952-6960, DOI:jmes.14.2.2020.32.0544

Keywords

Computational Mechanics – MeshFree – Shell modeling – Biomechanics

Google Scholar : https://scholar.google.com/citations?sortby=pubdate&user=egG3iqMAAAAJ

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ResearchGate: http://www.researchgate.net/profile/Hakim_Naceur