

**Name: Dr. Raouf Mbarki****Rank: Assistant Professor - Mechanical Engineering****Personal Information**

Nationality:	Tunisian
AU Joining Date:	29 Sep 2015
E-Mail Address:	r.mbarki@au.edu.kw

Professional Information

Education:	Qualification: Doctorate Major: Mechanical Engineering College/University: University of Houston Year: 2013/2014 Qualification: Masters Major: Civil Engineering College/University: Michigan State University Year: 2007/2008 Qualification: Bachelor Major: Mechanical Engineering College/University: Tunisia Polytechnic School Year: 2006/2007
Specialization:	Nano mechanics, Energy harvesting and storage, Material modeling
Current Academic Position:	Assistant Professor - Mechanical Engineering
Current Professional Positions:	NA
Previous Administrative Position Held:	NA

Previous Academic Positions Held:	NA
Fellowships And Honors:	NA
Teaching Experience:	Lecturer - University of Houston Teaching Assistant - University of Houston Teaching Assistant - Michigan State university
Industrial And Technical Experience:	Product Engineer Analyst, DeepFlex Inc, USA, 9/2014 – 5/2015 System Engineer, Kopileft, Tunisia, 1/2008- 8/2008
Research Interest:	Energy harvesting devices, material modeling, batteries and capacitors, smart material, Biomaterial modeling
Research Grants:	AU research Grant KFAS Grant
Research and Publications including Journal and Books:	• Mbarki, Raouf; Kutay, M Emin; Gibson, Nelson; Abbas, Ala R; "Comparison between fatigue performance of horizontal cores from different asphalt pavement depths and laboratory specimens", Road materials and pavement design,13,3,422-432,2012 • Mbarki, Raouf; Baccam, Nina; Dayal, Kaushik; Sharma, Pradeep; "Piezoelectricity above the Curie temperature? Combining flexoelectricity and functional grading to enable high-temperature electromechanical coupling", Applied Physics Letters,104,12,122904,2014 • Mbarki, R; Haskins, JB; Kinaci, A; Cagin, T; "Temperature dependence of flexoelectricity in BaTiO₃ and SrTiO₃ perovskite nanostructures", Physics Letters A,378,30-31,2181–2183,2014 • Mbarki, R; Borvayeh, L; Sabati, M; Investigation of the Flexoelectric Coupling Effect on the 180 Domain Wall Structure and Interaction with Defects", J Material Sci Eng,5,264,2169-0022.10002,2016 • Sedaghat, Ahmad; AlJundub, Mohammad; Eilaghi, Armin; Bani-Hani, Ehab; Sabri, Farhad; Mbarki, Raouf; Assad, M El Haj; "Application of pbl in the course fluid and electrical drive systems, case study: Manufacturing an automated punch machine", Journal of Problem Based Learning in Higher Education,5,2,2017 • Borvayeh, Leila; Sabati, Mohammad; Mbarki, Raouf; "An Optimization Method for Quantifying Magnetization Vectors in Magnetic Resonance Measurements", International Journal of Scientific Research in Science, Engineering and Technology,4,8,162-169,2018 • Mbarki, Raouf; Al Khatib, Fadi; Adouni, Malek; "Multiscale Syntheses of Knee Collateral Ligament Stresses: Aggregate Mechanics as a Function of Molecular Properties", International Journal of Medical, Health, Biomedical, Bioengineering and Pharmaceutical Engineering,12,9,388 - 393,2018 • Adouni, Malek; Mbarki, Raouf; Al Khatib, Fadi; Eilaghi, Armin; "Multiscale modeling of knee ligament biomechanics", International Journal for Numerical Methods in Biomedical Engineering,37,1,e3413,2021

	- Al Khatib, Fadi; Gouissem, Afif; Mbarki, Raouf; Adouni, Malek; "Biomechanical characteristics of the knee joint during gait in obese versus normal Subjects", International Journal of Environmental Research and Public Health,19,2,989,2022 - Gouissem, Afif; Mbarki, Raouf; Al Khatib, Fadi; Adouni, Malek; "Multiscale Characterization of Type I Collagen Fibril Stress–Strain Behavior under Tensile Load: Analytical vs. MD Approaches", Bioengineering,9,5,193,2022 - Khatib, Fadi Al; Gouissem, Afif; Mbarki, Raouf; Adouni, Malek; "Biomechanical Characteristics of the Knee Joint during Gait in Obese versus Normal Subjects", IJERPH,19,2,44940,2022 - Adouni, Malek; Gouissem, Afif; Mbarki, Raouf; "AGES effect on the biomechanics of the knee tendon", Results in Engineering, 18, 101155,2023
Paper Presentations at Professional Conferences:	- R Mbarki, F Al Khatib, M Adouni, "Multiscale Syntheses of Knee Collateral Ligament Stresses: Aggregate Mechanics as a Function of Molecular Properties", 20th International Conference on Biomedical Science and Engineering, 2018 L. Borvayeh, R. Mbarki, F. Alkhatib, A. Sedaghat, A. Hassanzadeh, J. Jamali, A. Mostafaeipour, "A New Capacity Factor Based on Rated Wind Speed for Optimal Selection of Wind Turbines", Proceedings of ISERD International Conference, Abu Dhabi, UAE, 2nd -3rd March 2018. - Kutay, M.E., R. Mbarki, "Comparison between Fatigue Performances of Horizontal Cores from Different Asphalt Pavement Depths and Laboratory Specimens". 1st International Conference of Middle East Society of Asphalt Pavements (MESAT), July 4th, 2010, Beirut, Lebanon.
College Service including committee Membership:	NA
National Service:	NA
College Committees:	Auditing and Quality Management Committee, Chair CT committee, member PBL committee, member