Symposium on Mechanical Engineering

Chair: César Sá and Abel Santos
Location: B025
Time for presentation: 40 min. for keynote speakers; 15 min. for presenting authors

Session I (Thursday, 8th of June, 9:45h-11) | Moderated by Albertino Arteiro (FEUP/INEGI)
- Joana Gomes, Jorge Belinha, Lúcia Dinis and Renato Natal Jorge. A phenomenological study of chitosan nerve conduits for the regeneration of peripheral nerves #26
- Daniel Rodrigues, Jorge Belinha, Lúcia Dinis and Renato Natal Jorge. Simulation of the elasto-plastic behaviour of polymeric materials when subjected to compression loads #29
- Marco Marques, Jorge Belinha, António Fonseca Oliveira and Renato Natal Jorge. Tensor Fabric definition using micro-CT Images #30
- João Martins, António Andrade-Campos and Sandrine Thuillier. Parameter Identification Strategies for non-linear mechanical models #160
- Manuel A. F. Araújo and J. Luís Alves. Damage models in metal forming #203

Session II (Thursday, 8th of June, 11:30h-13) | Moderated by Eduardo Marques (FEUP/INEGI)
- José Machado, Eduardo Marques, Raul Campilho and Lucas da Silva. Mode I and II determination of CFRP as a function of temperature and strain rate #1
- Marcelo Costa, Guilherme Viana, Lucas Filipe Martins da Silva and Raul Duarte Salgueiral Gomes Campilho. Development of a cohesive zone element for adhesive joints subjected to fatigue and humidity degradation #9
- Ana Barbosa. Influence of size, amount and surface treatment on a brittle epoxy toughened with micro cork particles #16
- Tiago Sanches and Kouamana Bousson. Optimal Robust Trajectory Control of Atmospheric Flights #142
- Kawser Ahmed and Kouamana Bousson. 4D Commercial Trajectory Optimization for Fuel Saving and Environmental Impact Reduction #148
- Milca Coelho and Kouamana Bousson. Adaptive Nonlinear Filter and Optimal Radar Tracking of Aerospace Vehicles #165

Session III (Thursday, 8th of June, 14:30h-16:15) | Moderated by Abílio Jesus (FEUP/INEGI)
- **Invited speaker: Prof. João Manuel R. S. Tavares.**
- Tiago .E.F. Silva, A.M.P. Jesus, P.A.R. Rosa and A. Reis. Flow stress and damage constitutive models identification for metal cutting simulation based on experimental tests featuring shear mechanism #113
- Soumitra Gain, Diogo Pinto, Rui Soares, Tiago Silva, Abilio Jesus and Ana Reis. Identification of Flow Stress Curve for the Al9SiCu3 using Johnson-Cook formulation #151
- Santiago David Castellanos Villa and Jorge Lino Alves. A Review of Milling of The Gamma Titanium Aluminides #171
- Rui Soares, Ana Andrade, Santiago Castellanos, Abílio Jesus and Ana Reis   Experimental Study on Machinability of Gypsum Plaster with Potential Application in Hybrid Manufacturing #198

Session IV (Friday, 9th of June, 9h-10:15) | Moderated by Inês Oliveira (FEUP/INEGI)
- Dipak Wagre, Abel Santos, Diogo M. Neto, Rui Amaral and Marta C. Oliveira. Springback analysis using finite element method of an aluminium panel processed by sheet metal forming #111
- Erfan Azinpour, José César de Sá and Abel Santos. Ductile failure modelling using gradient and phase field approaches #132
- Rui Amaral, Abel Santos, José César de Sá and Sara Miranda. A comparative analysis on the ability of ductile damage models to predict fracture #164
- Sara Miranda, Abel D. Santos, Manuel. R. Barbosa, J. Bessa Pacheco and Rui Amaral Air Bending Analysis using Artificial Neural Networks #166
- André F. G. Pereira, Pedro A. Prates, Marta C. Oliveira and José V. Fernandes. Identification of the work hardening parameters using the bulge test with elliptical and circular dies #199

Session V (Friday, 9ᵗʰ of June, 11h-12:30) | Moderated by Pedro Moreira (FEUP/INEGI)

- Behzad V. Farahani, Paulo Jose Tavares, Pedro Moreira and Jorge Belinha. A Fracture Mechanics Analysis on a Compact Tension Specimen #44
- Anvar Makhkamov, Rui Amaral, Abel Santos, António Baptista and Luis Malheiro. Determination of the friction coefficient in the flat track strip drawing test #51
- Rita Rynkevic, Pedro Martins and António Fernandes. In-vitro degradation test and effect of freezing on mechanical performance of meshes used in hernia surgery #63
- Syed Asad Ali Zaidi, Kashif Mushtaq and Muhammad Asif. Design and Fabrication of supersonic shock tube capable of producing shock waves #68
- João Pereira Amorim and José Dias Rodrigues. Passive Vibration Control Using Viscoelastic Damping Patches #168
- Antonio Gomes, Joaquim Mendes and João Tavares. A Low-Cost System for the Biomechanical Analysis of Tennis Players #192

Poster Session (Friday, 9ᵗʰ of June, 14h-14:30)

- Leonardo Santana, Jorge Lino Alves and Aurélio Sabino Da Costa Netto. Low cost 3D printing applied to Design for Assembly: building snap fits #109
- Abderrahim Aissa, Elza M M Fonseca and Belkacem Lamri. Computational model for W-W-W connections at ambient and high temperatures #133
- Gabriel Costa, Elza M M Fonseca and Laercio J Junior. Numerical model to evaluate the protected and unprotected wooden slabs under fire #139
- Maria Fernandes, Elza Fonseca and Renato Jorge. Drilling of bone: numerical and experimental investigations #147
- Edwin Garzon, Jorge Lino Alves and Leonardo Santana. Optimization of Post-Processing of Infiltration in Pieces Obtained by 3D Printing with Plaster Powder Material #173