

Report 2022

P. M. S. T. de Castro

Papers

- Paulo M. S. T. de Castro, ‘Bi-material flywheels and Castigliano’s theorems: a case study’, *Journal on Mechanics of Solids*. 2022, 1, (1), pp.39-59.
https://doi.org/10.24840/2975-8262_001-001_001818
- Tomás Carneiro, João Oliveira, António J. Baptista, Paulo M. S. T. de Castro, ‘LeanDfX Framework Supported by Fuzzy QFD’, *Designs* 2022, 6, (6), 114;
<https://doi.org/10.3390/designs6060114>
- Paulo M. S. T. de Castro, ‘Engineering and society – prospective remarks, with a focus on Portugal’, submitted 2022-07-22 for possible publication in *Journal on Teaching Engineering*. (accepted October 10, 2022)

Presentations

- Paulo M. S. T. de Castro, 'Engineering and Society: Prospective Remarks', abstract in C. Quental *et. al.*, eds., 'Book of Abstracts - 5th Meeting of the Young Researchers of LAETA', 5-6 May 2022, IST, Lisboa, p.19.

Commentary, opinion and media

- Paulo M. S. T. de Castro, ‘Portugal 2022: Human Capital, Economic Development and Migrations’, in: ‘International Migration and Development of Human Potential: Proceedings of the 1st International Scientific and Practical Internet Conference’, September 14-15, 2022. FOP Marenichenko V.V., Dnipro, Ukraine, pp.6-21, ISBN 978-617-95229-5-6.
- Eduardo Marçal Grilo, José António Sarsfield Cabral, Paulo Tavares de Castro, Rui Guimarães, ‘Riscos do enviesamento informativo : o recente exemplo sobre a educação em Portugal’, *Público*, October 18, 2022, p.9
- Paulo M. S. T. de Castro, ‘Inflation, nuclear energy and Ukraine’s reconstruction’, in: ‘Russia-Ukraine War: Consequences for the World: Proceedings of the 2nd International Scientific and Practical Internet Conference’, October 20-21, 2022. FOP Marenichenko V.V., Dnipro, Ukraine, pp.8-17, ISBN 978-617-95229-6-3.
- Paulo M. S. T. de Castro, ‘Transparency and Development’, in: ‘Elimination and Prevention of Corruption at State, Public and Personal Level: Proceedings of the 1st International Scientific and Practical Internet Conference’, November 17-18, 2022. FOP Marenichenko V.V., Dnipro, Ukraine, pp.4-12, ISBN 978-617-95262-0-6.

Invited seminars

- 2022-04-29 – presentation to course ‘Introduction to Mechanical Engineering’¹ of 1st year FEUP Mech. Eng. students (*licenciatura*), on-line via ZOOM.

¹ course L.EM011 ‘Introdução à Engenharia Mecânica’ (IEM).

Project proposals

- FCT, Concurso de projetos de I&D em todos os domínios científicos - 8 de Fevereiro de 2022 a 11 de Março de 2022; candidatura 2022.04470.PTDC: ‘Adhesive characterization using micro indentation technique: Strength and fracture energy assessment - AdMicrond’. Alireza Akhavan Safar – PI. Mechanical Engineering and Engineering Systems - Scientific Research and Technological Development Projects; rejected.

Service

- member of the Advisory Board (Conselho Consultivo) of TEMA Universidade de Aveiro.
 - Asad Khattak, José A. P. Pires, Paulo M. S. T. de Castro, ‘Opinion of the Advisory Committee of TEMA on “TEMA 2020 report”’, February 2022
- member of the External Scientific Advisory Board of CEMMPRE Universidade de Coimbra.
 - Zoom meeting on 2022-06-13.
 - participation in ‘CEMMPRE 2022 meeting’, Universidade de Coimbra, 2022-07-08.
 - P. M. S. T. de Castro, ‘An opinion on CEMMPRE report 2021-2019’, 2022-07-24.
- South Africa’s National Research Foundation (NRF): evaluation of the quality, impact and standing of the research portfolio of [*candidate ...*] working in the field/s of "Physical metallurgy; Mechanical behaviour of materials and surfaces; Applied Mechanics of Materials; Structural integrity; Composite materials". Invitation by Vuyo Mliswa of NRF on 2022-08-09; evaluation submitted on 2022-08-15, acknowledged Sept. 22, 2022.
- European Aeronautics Science Network – EASN
 - 7th NCP (National Contact Points) meeting, Barcelona, 2022-10-19; the Portugal NCP (P. T. de Castro) was represented in the in person meeting by Dr. S. M. O. Tavares.
 - Identification of possible contributions to EASN White Book in Aviation.

Academic panels

IST, Universidade de Lisboa

- Habilitation of Dr. Giuseppe Catalanotti, IST, Universidade de Lisboa; ZOOM examination, Feb. 2-3, 2022

Universidade do Minho

- Diário da República, 2.^a série Parte E, N.º 237, 9 de dezembro de 2021, Pág. 139, Universidade do Minho, Reitoria, Edital n.º 1416/2021 concurso documental, de âmbito internacional, para recrutamento de um posto de trabalho de professor auxiliar na área disciplinar de Metalurgia e Mecânica de Materiais
 - 1.^a reunião 2022-03-18
 - 2.^a reunião 2022-04-19

- Univ. Minho Edital n.º 1044/2022: concurso documental de âmbito internacional de recrutamento para um posto de trabalho de Professor Auxiliar na área disciplinar de Metalurgia e Mecânica dos Materiais. 1ª reunião: 2022-12-20.

Universidade de Aveiro

- CI-CTTI-89-SGRH/2022 - Concurso documental de âmbito internacional para recrutamento de 1 posto de trabalho de Investigador Auxiliar; primeira reunião do júri: 29 de novembro de 2022, 14h00.
- CI-CTTI-99-SGRH/2022 - Concurso documental de âmbito internacional para recrutamento de 1 posto de trabalho de Investigador Auxiliar; primeira reunião do júri: 29 de novembro de 2022, 15 horas.

Juries of theses

Università di Pisa, Italy

- Università di Pisa - Dottorato di Ricerca in Ingegneria Industriale - Referee's report on Doctorate Thesis of Federico Bovecchi "Influence of engineered residual stresses on the fatigue properties of aluminium alloys: experimental and numerical investigations", May 14, 2022
- Università di Pisa - Dottorato di Ricerca in Ingegneria Industriale – doctoral examination of Federico Bovecchi, "Influence of engineered residual stresses on the fatigue properties of aluminium alloys: experimental and numerical investigations", examination panel: Phil Irving (Cranfield University), P.M.S.T. de Castro (Univ. Porto), Benjamin Kluseman (Leuphana Universität Lüneburg); September 20, 2022

Universidade de Aveiro

- 20 de Julho de 2022. Leonardo Samuel Ascensão Pires, 'Projeto e desenvolvimento de reservatórios em aço inoxidável', dissertação de Mestrado em Eng. Mecânica, Universidade de Aveiro,

Editorial boards (new appointment)

- Editorial Board Member, Journal on Mechanics of Solids (JMS) ISSN 2975-8262, University of Porto, Portugal. 2022-03-30

Scientific committees of conferences, chairmanship

- 26th International Scientific Conference (online) TRANSPORT MEANS 2022 Sustainability: Research and Solutions, Kaunas, October 5-7, 2022
- 12th EASN International Conference on 'Innovation in Aviation & Space opening New Horizons', Barcelona, Spain October 18-21, 2022. (co-organized by the EASN Association and the Universitat Politecnica de Catalunya - BarcelonaTech - UPC)
- 7th International Virtual Conference of Engineering Against Failure – ICEAF VII, Spetses, Greece, June 21 – 23, 2023.
- 13th EASN International Conference on "Innovation in Aviation & Space for Opening New Horizons" be held in Salerno, Italy on September 5th to 8th, 2023. The event is co-organized by the EASN Association and the University of Salerno.

Membership of societies etc.

Academia das Ciências de Lisboa

- 2022-03-04: Plenário-Geral da Classe de Ciências
- 2022-04-19: Plenário-Geral
- 2022-12-15: Plenário-Geral
- sessions:
 - 2022-01-13
 - 2022-01-20
 - 2022-01-27
 - 2022-03-17
 - 2022-03-24
 - 2022-04-07
 - 2022-04-12
 - 2022-05-12
 - 2022-05-25
 - 2022-06-02
 - 2022-06-23
 - 2022-07-14
 - 2022-09-29
 - 2022-10-06
 - 2022-10-20
 - 2022-11-03
 - 2022-11-24
- 2022-03-08: Luísa Ribeiro Ferreira ‘Pensar (n) o feminino no século XXI’, integrada no ciclo ‘Sociedade no Século XXI’
- 2022-03-29: Joint session of Academia das Ciências de Lisboa and Accademia Nazionale dei Lincei
- 2022-04-08 - Encerramento do Curso de Estratégia e Segurança, Cátedra UNESCO EDUWELL, Luís Tomé
- 2022-06-06 to 07: Ciência e Cultura – 50 Anos depois da Conferência de Estocolmo
- 2022-07-11: Seminário de Jovens Cientistas - Sessão de Encerramento do Ciclo "Como Dialogar com quem não quer ouvir: para lá da polarização e da desinformação"
- 2022-10-07: Sessão Comemorativa Bicentenário da Constituição de 1822
- 2022-11-04: Comemoração do Centenário de José Pinto Peixoto
- 2022-12-12: Sessão Evocativa do Centenário de José-Augusto França
- Ciclo: Desafios da Ciência na Sociedade Contemporânea
 - 2022-11-23 - Ciência e Políticas Públicas
 - 2022-12-7 - Ser Profissional de Ciência. As Novas Gerações de Cientistas

New Club of Paris

- general assembly 2022, June 24, 2022, online

Annex

Events (mostly online)

- AD&C - Agência para o Desenvolvimento e Coesão
 - 2022-05-12, Félix Ribeiro.
- ASME
 - ASME iWME 2022: Increasing women in mechanical engineering, 2022-02-03 to 04.
 - ASME International Mechanical Engineering Education Leadership Summit (MEED) (virtual event), March 10, 2022
 - ASME webinar, Matthew Pluchino, A Day in the Life of an ME working at Lockheed Martin, 2022-03-14.
- CNE - Conselho Nacional de Educação
 - Conselho Nacional de Educação e o projeto PEQUES - webinar Como melhorar a participação dos estudantes nas IES e na pedagogia do Ensino Superior? 2022-04-07.
- Cranfield University
 - ‘4-day week’, Professor Emma Parry *et al.*, 2022-04-26.
- European Union
 - European Research and Innovation Days 2022, September 28-29, 2022.
- FCT
 - 25 anos da FCT na Ciência: Oportunidades e Desafios, Lisboa, 2022-01-14.
 - 25 Anos da FCT. Formação avançada e doutoramentos, Aveiro, 2022-03-03.
 - 25 Anos da FCT. Emprego científico e carreiras científicas, FCTUC - Pólo II, 2022-03-31.
- FEUP
 - FEUP LEA Workshop Future of Engineering Education, 2022-03-14.
 - FEUP, ‘Inventar de Novo a Escola’ ciclo Creative Talks, Sampaio da Nóvoa, 2022-03-17.
- Força Aérea Portuguesa
 - IV Jornadas Aeronáuticas, Lisboa, 2022-06-28 (presencial).
- OTC - Organização dos Trabalhadores Científicos
 - 2022-03-31 ‘O papel da FCT no sistema nacional de ciência e tecnologia’.
- Pacto Português para os Plásticos
 - 2022-07-01, 5º webinar da iniciativa Acelerar 2025 do Pacto Português para os Plásticos.
- Portugal Air Summit 2022
 - Portugal Air Summit 2022 Ponte do Sor 2022-10-12 to 15 (www panel ‘Ponte de Sor uma nova centralidade na indústria aeronáutica’).
- projecto InsSciDE
 - InsSciDE open conference, Lisbon, March 22-24, 2022, online.
 - InsSciDE concluding conference, Paris, June 23-24, 2022, online.

<https://www.science-diplomacy.eu/scidip-conference-paris-programme/>

Other

- voluntary contribution to the study ‘European Research Data Landscape’²

Visitors (among others)

- Frederik Dewulf (ex-Erasmus student, from Ghent Univ.) 2022-04-02 to 06
- Pedro Faria, Spacety, Luxembourg, 2022-09-20
- Felipe Klein Fiorentin, doutorando FEUP, 2022-10-24

² https://ec.europa.eu/info/news/ec-kicked-study-will-provide-full-characterisation-european-research-data-landscape-2021-jun-22_en