



Professor Isabel Duarte

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Division of Mechanical Engineering
University of Aveiro, Portugal

Biography:

Isabel Duarte has a Degree in Chemical Engineering from the University of Coimbra (1992), a Master's Degree in Materials Engineering by Instituto Superior Técnico (1998) and a Doctoral Degree in Sciences of Engineering from Faculty of Engineering of the University of Porto (2005). She has worked as a researcher on different RTD entities, and presently, is at the Department of Mechanical Engineering in the University of Aveiro. She is dedicated to R&D on the developing and characterization of advanced (polymeric, ceramic, metallic and composite) materials using different processing technologies (e.g. powder technology, slip casting, freeze granulation and reaction sintering), collaborated with national and international RTD entities, University and Industrial partners. As visiting researcher, she has also been staying in some universities or research institutes both in Portugal and abroad (University of Maribor and Helmholtz-Centre Berlin) for short periods of time. For the last 15 years, she has focused her research in the metallic foams field, where she has vast experience. She started to work in this field, since September of 1998, as a Research Fellow at the well-known recognized Fraunhofer-Institut für Angewandte Materialforschung (IFAM, Bremen, Germany) in this field. Furthermore, she achieved her doctoral degree in this field with the thesis entitled "Metallic Foams: Production, Characterization and Numerical Simulation". Her research work in this field, resulted in the development of equipment and tools for monitoring the evolution of the liquid metal foam in-situ and for producing in continuous and an automatic operation components based on metal foam, as well as the development of several prototypes on Al-alloy foams including sandwich panels, complex 3D shaped structures (gun and steering

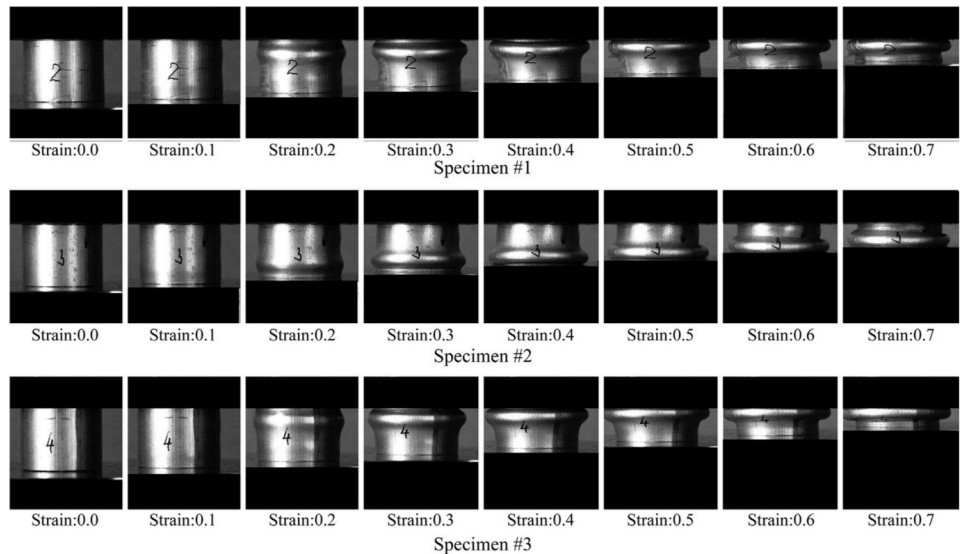


Fig. 8. Sequential deformation of three tube specimens filled with polyamide-bonded APM elements.

From: Isabel Duarte, Matej Vesenjak, Lovre Krstulovic-Opara and Zoran Ren, "Compressive performance evaluation of APM (Advanced Pore Morphology) foam filled tubes", *Composite Structures*, Vol. 134, pp 409-420, December 2015

wheel), profiles filled with a metallic foam (ex-situ and in-situ foam filled tubes) or even metallic foam with metallic inserts (e.g. screws). Currently, she is focused on development and characterization of new profiles filled with different metal porous medium (e.g. metallic hollow spheres structures and advanced pore morphology foam). Also, she is also focused on the processing of new metal foams reinforced with functionalized carbonaceous nanomaterials for structural engineering and functional applications. She has scientific papers in ISI international journals with over 325 citations.

Research Interests:

Advanced lightweight materials and structures, Porous metals and metallic foams; Physics of metal foaming; Nanostructured metallic foams; Graded materials, Foam-filled structures; Hybrid materials

Education:

PhD, FEUP, University of Porto, 2005.

MSc, IST, Instituto Superior Técnico, University of Lisbon, 1998.

BEng, Faculty of Science and Technology, University of Coimbra, 1992.

Experience:

[2009-present] Researcher, Dept. Mechanical Engineering, University of Aveiro, Portugal.

[2013-2015] Invited Visiting Scientist, University of Maribor. Maribor, Slovenia.

[2010] Invited visiting Scientist. Period: 23 May-12 June 2010. Helmholtz Zentrum Berlin für Materialien and Energie, Technical University of Berlin. Germany.

[2003-2005] Visiting Scientist, FEUP, University of Porto, Porto, Portugal.

[1998-1999] European TMR Grant Holder, IFAM, Fraunhofer-Institut für Angewandte Materialforschung, Bremen, Germany.

[1994 – 2008] Researcher, LNEG (ex-INETI), Lisbon, Portugal.

[1992-1994] Researcher, IST, Instituto Superior Técnico, University of Lisbon, Portugal.

Selected Publications:

Isabel Duarte, Matej Vesenjak and Lovre Krstulovic-Opara, “Dynamic and quasi-static bending behaviour of thin-walled aluminium tubes filled with aluminium foam”, *Composite Structures*, Vol. 109, pp 48-56, March 2014

Isabel Duarte, Lovre Krstulovic-Opara and Matej Vesenjak, “Characterisation of aluminium alloy tubes filled with aluminium alloy integral-skin foam under axial compressive loads”, *Composite Structures*, Vol. 121, pp 154-162, March 2015

Isabel Duarte, Matej Vesenjak, Lovre Krstulovic-Opara and Zoran Ren, “Static and dynamic axial crush performance of in-situ foam-filled tubes”, *Composite Structures*, Vol. 124, pp 128-139, June 2015

Isabel Duarte, Matej Vesenjak, Lovre Krstulovic-Opara and Zoran Ren, “Compressive performance evaluation of APM (Advanced Pore Morphology) foam filled tubes”, *Composite Structures*, Vol. 134, pp 409-420, December 2015

Isabel Duarte, Matej Vesenjak and Lovre Krstulovic-Opara, “Compressive behaviour of unconstrained and constrained integral-skin closed-cell aluminium foam”, *Composite Structures*, Vol. 154, pp 231-238, October 2016