

Catalin Iulian PRUNCU

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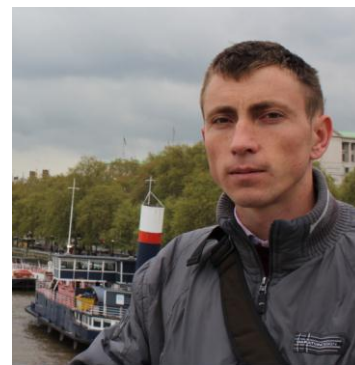
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Ph.D student in Mechanics/Materials

Objective: experimental research projects on **Mechanics/Materials Science /Metallurgy** connected to the industry

Areas of Expertise: fracture mechanics ~ mechanical fracture behavior~ mechanical behavior ~ life-fatigue of materials~ microstructure characterization ~ metallurgy ~ crystallography ~ corrosion.

Work experience

**January –2010:
-present**

PhD student in Mechanics/Material Science

Department of Mechanical and Management Engineering,

Politecnico di Bari, Bari, Italy

Advisor: Prof Carmine Pappalettere

Tasks :

- characterization of metallic alloys (microstructure, texture and hardness)
- determination of fatigue crack initiation in alloy
- description of behavior of titanium alloy through Non-Destructive Method made Emission Acoustic technique corroborated by measurements and characterization with Scanning Electron Microscopy.

March –July 2009

M.Sc. thesis in Mechanics/Material Science

LABPS, University de Metz, France

Project in partnership with **GALVA 45 France**, on development of industrial maintenance.

Advisor: Prof Z. Azari

Tasks :

- supervise the mechanical tests (fatigue and life-fatigue),
- characterization of interface of metallic alloys (microstructure, texture and metallographic analyses),
- analyses of the cracks propagation,

The results of this project allow:

- localizing and characterizing of the cracks at the interface steel-zinc,
- characterization of materials lifetime after submitted to galvanization.

March-June 2008

Student internship in Mechanics

LFM, University de Metz, France

Elaboration and implementation of a Fracture Mechanics course.

Advisors : Prof G. Pluinage

Tasks :

- apply new procedure in order to display a pedagogical course,
- correlation between new and old pedagogical available methods

Education and Qualification

- 2010 Present** **Ph.D student in Mechanics/Materials**, Politecnico di Bari, Bari, Italy
(Defense programmed for December 2012)
- 2008-2009** **Masters in Materials Science & Engineering**,
University Paul Verlaine Metz, France
- 2008** **ERASMUS** student on **Materials engineering, ENI'M** at National School
of Engineering from Metz, France.
- 2003-2008** **Graduate in Mechanical Engineering** (2nd over 30),
Bacau University, Department of Mechanical Engineering, Romania
- 2003** Baccalaureate C (equivalent to A-level), Majors: Mathematics, Physics and Materials

Skills & Other

Microscopy

- Optical Microscopy (Olympus) and Scanning Electron Microscopes (Jeol 6500 F and Jeol 6490 W)

Additional information

- Member on Scientific Committee of 4rd International Conference Advanced Composite Materials Engineering (COMAT), Brasov, Romania, 18-20 October 2012
- Participant to summer school on "*Computational multiscale fracture mechanics*", University of Brescia, Italy, 25-29 June 2012
- **Organizer of New Trends in Fatigue and Fracture (NT2F12), Brasov, Romania, 2012**
- Participant to *4a Winter School il Dialogo dei Saperi nell'Università Politecnico di Bari, Italy*, 29 febbraio-7 marzo-15 marzo 2012
- Member on Scientific Committee of Computational Mechanics and Virtual Engineering (COMEC), Brasov, Romania, 20-22 October 2011
- attendance at 29th European Conference On Acoustic Emission Testing, Vienna, Austria, 8-10 September 2010
- attendance at Seminar of the graduate school EMMA Nancy, France, 25 June 2009
- Worker during the summer in the United Kingdom (July 2008-September 2008, May 2007-October 2007, July 2006 - October 2006)
- Nationality – Romanian
- Driving license
- Birth date -01/July/1984

Languages

- English/ Italian/ French/ Romanian and Russian: beginner

Computer

- Programming : C++, Pascal,

- Computing software: AutoCAD, Mechanical Desktop, NX4, Solide Edge, ABAQUS, Mathematica, Picasa.

Personal skills

- Good integration capacity in a new team
- Righteous leader capacity and team work (student representative for 5 years);
- Analytical ability, pragmatism

Personal interests

- Sports: mountain biking, hiking, football, Frisbee
- Trips, photography, painting, cooking, gardening

Publications

Journal

1) Numerical simulation in coated materials: model of crack propagation bi-material, Zitouni Azari, Caterina Casavola, Carmine Pappalettere, Catalin Iulian Pruncu*, Structural Integrity and Life, Vol. 12, Nr.2, pp 125-129, ISSN 1451-3749, 2012.

International conference

1) Influence of geometric shape of specimen in fatigue life characterization on welded joint in titanium alloy, Caterina Casavola, Carmine Pappalettere, Vincenzo Giordano, Catalin Iulian Pruncu*, New Trends in Fatigue and Fracture Congress (NT2F12), Brasov, Romania, 2012

2) Identification of some factors for determination of fatigue crack initiation life in titanium alloy, C.I. Pruncu, C. Casavola, C. Pappalettere, G. Pluvinage, New Trends in Fatigue and Fracture Congress (NT2F10), Metz, France, 2010

Conferences with proceedings

1) A short review of recent research on the mechanics of fracture and failure in composite materials, Catalin. I. Pruncu, 4rd International Conference Advanced Composite Materials Engineering (COMAT), ISBN 978-973-131-164-7, Lux Libris Publishing House, pp. 31-37, Vol I, 18-20 October 2012, Brasov, Romania.

2) Weight minimization of truss structures with Big Bang-Big Crunch, C. Casavola, L. Lamberti, C. I. Pruncu, 4rd International Conference Advanced Composite Materials Engineering (COMAT), ISBN 978-973-131-164-7, Lux Libris Publishing House, pp. 334-351, Vol II, 18-20 October 2012, Brasov, Romania.

3) Detection of fatigue crack initiation in titanium alloy under single-edge-notch (SEN) specimen by Acoustic Emission procedure, J. Cappele, Caterina Casavola, Carmine Pappalettere, Catalin Iulian Pruncu*, 11th Youth Symposium on Experimental Solid Mechanics, ISBN 978-606-19-0078-7, pp. 83-88, 30th of May ÷ 2nd of June 2012, Brasov, Romania.

4) Influence of the steel-zinc interface on the crack propagation: in the model of hot dip galvanized steel, Catalin. I. Pruncu, Carmine Pappalettere, Zitouni Azari, 3rd International Conference Advanced Composite Materials Engineering (COMAT), ISSN 1844-9336, pp. 139-144, 27-29 October 2010, Brasov, Romania.