Pr. Sébastien Y.P. ALLAIN

Full Professor
PhD (2004) / Habitation Thesis (2012)
Civil Engineer from Mines Nancy (N97)

RESUME

Sébastien ALLAIN (40 years old) is Professor at IJL (Jean Lamour Institute) and at Mines Nancy (Nancy's School of Mines) in France. During his PhD about mechanical properties and work hardening mechanisms of TWIP steels, he developed the basic structure of several models (thermodynamic stability, dynamic Hall-Petch strengthening effect, dynamic strain ageing) which have become references in the field. In 2013, he left ArcelorMittal research center (Automotive Product Group) for a researcher position at the Jean Lamour Institute in the field of solid state physical metallurgy. His research activities focus at present on the link between phase transformations, internal stresses and mechanical properties in steels (**3rd generation Advanced High Strength Steels** in particular) and in titanium alloys. He has authored or co-authored 46 peer-review articles in international journals (h-factor = 21 WOS) and holds 3 patents. For more details, please refer to http://orcid.org/0000-0001-6658-9231.

ACADEMIC TRAINING

2012: **Habilitation Thesis** to supervise research from Université de Lorraine
« Comportement mécanique des aciers : des mécanismes fondamentaux à la déformation macroscopique » (https://arxiv.org/abs/1401.2099)

2004: **PhD Thesis** in Material Science and Engineering (Graduate School EMMA)
« Caractérisation et modélisation thermomécaniques multi-échelles des mécanismes de déformation et d'écrouissage d'aciers austénitiques à haute teneur en manganèse – Application à l'effet TWIP »

2000: Diplôme d'**ingénieur civil de l'Ecole des Mines de Nancy**
DEA Science et Ingénierie des Matériaux (Graduate School EMMA)

PROFESSIONAL POSITIONS

2013-2018: **Full University Professor**
Teaching: Material Dept. of Mines Nancy
Research: Institut Jean Lamour / Metallurgy Dept. / Microstructure and Stresses team

2004-2013: **Research Engineer** at Arcelormittal Maizières Research SA (Automotive Products)
Project leader (3rd generation Advanced High Strength Steels industrialization & knowledge building on microstructure/properties relationships)

2000-2004: CIFRE Research engineer (ARCELOR) at LPM Nancy / **PhD Student**

PUBLICATIONS AND CITATIONS

- **46 publications** in international peer-review journals
- Web Of Science report (05/2018): 52 papers - 2900 citations – h factor = 21 – 4 highly cited papers
- **3 PCT patent applications**
- Co-author of 4 final reports of projects funded by the RFCS (Research Fund for Coal and Steels)

SCIENTIFIC SUPERVIZING

- PhD director:
  Meriem Ben-Haj-Slama (Labex Damas/ Région Lorraine) defended in 2018
  Marc Moreno (Collaboration with Arcelormittal) since 2015
  Guillaume Sophys (Graduate school EMMA) since 2015
- PhD Co-supervisor: **David Barbier** defended in 2009 / **Steven Dillien** defended in 2010 / **Jean-Christophe Hell** defended in 2011 / **Alexis Dumay** defended in 2008
  Steve Gaudez (RFCS project STEELSECO) since 2017
- Master Co-supervisor: Marc Moreno in 2015 / Steve Gaudez in 2017
- Participation to 13 PhD boards of examiners in Europe (France, Belgium, Spain)

SCIENTIFIC DIFFUSION, INTERNATIONAL RECOGNITION AND VISIBILITY

2017: Vanitec Award 2017 (IOM3)
2010 : Médaille Jean Rist (SF2M)
2007 : Hunt-Kelly Outstanding Paper Award 2007 (AIST)
2006 : Best publication award of la revue de métallurgie (SF2M)
2006 : Gilbert R. Speich Award for best paper 2006 (AIST)
2004 : PhD award from Région Lorraine (2nd position)

- Invited talks in international conferences and workshops (TMS, MSIA)
- Presentations and session chairing in international conferences (TMS, ICOMAT, EUROMAT, PTM)
- 3 Elsevier Top cited articles 2007-2011 awards
  Scripta Materialia (10.1016/j.scriptamat.2007.10.050)
  Material Science Engineering A (10.1016/j.msea.2008.09.031)
  COSSMS (10.1016/j.cossms.2011.04.002)

SCIENTIFIC ACTIVITIES AND PROJECTS

- Coordinator and Principal Investigator of CAPNANO project operated by ANR (2014-2018)
- Principal Investigator for Arcelormittal in the RFCS projects (DUCTAFORM, NOVELCFB, PREMPROP)
- Collaborations in RFCS projects (IMMAC, STEELSECO)
- Active international collaborations with Pr. H. Zurob (Mc Master-Canada), Pr. C. Sinclair (UBC-Canada), Pr. F.G. Caballero (CENIM-Spain), Dr C. Scott (CANMET Materials-Canada)
- Member of the ESTEP (European Steel Platform), Working Group Automotive
- Reviewer for international journals: Philosophical Magazine, Philosophical Magazine Letters, Scripta Materialia, Material Science and engineering, Acta Materialia, Scientific Reports
- International expert for NSERC (Canada) / ERC (E.C.)
- Organizing committee of Plasticité 2012, Plasticité 2018 and Métallurgie 2019 Conferences
- Scientific committee of international conferences (HMnS 2019, MSIA 2018)
- Active collaboration with the Museum of Steel History of Nancy

ACADEMIC AND TEACHING ACTIVITIES

2000-2013: about 230 h TD/TP
2013-2018: about 270 h TD/TP/year as Professor

- Regular Lectures: Material Forming (36h), Plasticity & Dislocations (21h), Material Selection (21h + 9h), Materials for engineers (36h), Continuous Medium Mechanics (40h), ARTEM workshop
- Project supervisors: 4 to 6 industrial/scientific projects / year
- Head for the academic course “Structural Material” in the Material dept. of Mines Nancy
- Elected member of Mines Nancy School Council since 2013