



Jesús Galán López

Ávila, Spain 1981

Work

- 2018 – 2022 Postdoctoral researcher at TU Delft (NL)
- 2014 – 2018 Postdoctoral researcher at M2i (NL)
- 2008 – 2014 Scientific researcher / academic assistant at UGent (BE)
- 2010 – 2011 (6 months) Plan 9 from Bell Labs (Google)
- 2008 – 2008 (6 months) Laboratory technician at UGent (BE)
- 2007 – 2008 (6 months) Internship at OCAS NV (BE)

Studies

- 2008 – 2014 PhD in engineering at UGent (BE)
- 2006 – 2007 Master thesis (Erasmus) at Università degli studi di Lecce (IT)
- 1999 – 2007 Industrial engineering at Universidad de Valladolid (ES)

Experience

Academic and industrial research <https://scholar.google.com/citations?user=cZ6V-mAAAAAJ>
Mechanical engineering, materials science, computational materials science
Material characterization and modelling of steels and metallic alloys

Other skills

Programming languages and software engineering, operating systems, civil and electrical engineering, control systems, CAD/CAM, patisserie, ...

Languages

Spanish (m), English, Italian
C/C++, Fortran, Python, and many others



Detailed work experience

Postdoctoral researcher at TU Delft (NL) 2018 – 2022

Participation in a large project in collaboration with industrial and academic partners (M2i, Tata Steel Europe) and, during two years, also in an European RFCS project. Main task was the development of different models for the simulation of steel production processes (phase transformations, plastic deformation), including its theoretical development, software implementation, and experimental validation. Also supervision of doctoral students and other activities at the materials department in the university.

Postdoctoral researcher at M2i (NL) 2014 – 2018

Participation in an European RFCS project with academic and industrial partners, as part of the TU Delft materials department of the 3mE faculty. The main task was to simulate the mechanical behaviour of bainitic steels, while working close to a doctoral student dedicated to experimental studies. Also supervision of this student and other common tasks at the department.

PhD student and academic assistant at UGent (Be) 2008 – 2014

Several roles at Ghent University in the mechanical engineering and materials departments, while performing PhD studies, including academic assistant (3 years), participation in different research projects, and work as laboratory technician. While the thesis was dedicated to the modelling of Ti-6Al-4V plastic deformation using crystal plasticity, other work included the development of crystal plasticity models for steels, extensive experimental work related with fatigue and high strain rate behaviour, and different educational activities.

Plan 9 from Bell Labs (Google Summer of Code) 2010, 2011

Participated in the “Summer of code” program of Google during years 2010 and 2011 (3 months each year). This program allows the selected students to do paid work in open source projects. The work was done in collaboration with the Plan 9 from Bell Labs project, working in the development of virtualization software (9vx) and related tools.

Internship and technician at OCAS NV / UGent (Be) 2007 – 2008

Laboratory work for OCAS (ArcelorMittal) related with the properties of steels under hydrogen charging. First, as an intern for OCAS (also enjoying a grant from the Leonardo Da Vinci European programme) and, later, with a role of laboratory technician at Ghent University. Extensive usage of a large number of experimental techniques and development of analysis tools to study the obtained results.



Selected publications



More publications at: <https://scholar.google.com/citations?user=cZ6V-mAAAAAJ>

Advanced Crystal Plasticity Modeling of Multi-Phase Steels: Work-Hardening, Strain Rate Sensitivity and Formability

J Galán-López, B Shakerifard, J Ochoa-Avendaño, LAI Kestens. *Applied Sciences*. 2021

Application of the VPSC crystal plasticity model to the simulation of bainitic steels. Different experiments are used for the fitting of the parameters of a physical hardening law. The obtained model is used in a “virtual-lab” setup for the study of different mechanical properties, including the calculation of Lankford coefficients and yield surfaces.

A multivariate grain size and orientation distribution function: derivation from electron backscatter diffraction data and applications

J Galán López, LAI Kestens. *Journal of Applied Crystallography*. 2021

Presentation of a new method for the condensed description of microstructures combining the classical grain size and orientation distribution functions. Several applications of the method are shown, including the study of various sets of EBSD and 3D-EBSD experimental data corresponding to different steel grades.

Optimization of Crystallographic Texture for Sheet-forming Applications Using Taylor-based Models

J Galán-López, LAI Kestens. *Metallurgical and Materials Transactions A*. 2018

Application of a new optimization method based on crystal plasticity models to the improvement of the formability properties of steels. The method allows to find not only what is the optimal crystallographic texture, but also what is the best path towards this optimum.

An improved algorithm for the polycrystal viscoplastic self-consistent model and its integration with implicit finite element schemes

J Galán, P Verleysen, RA Lebensohn. *Modelling and Simulation in MSE*. 2014

New implementation of the VPSC model with improved performance thanks to the use of a new algorithm. The model can also be used in the Abaqus finite element software for the simulation of complex problems. Several examples show that the performance of the original model is significantly increased.

