Prof. Noël Jakse

Address

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Curriculum Vitae

Education:

13.05.1966	born in Saint-Avold, France
1986 – 1989	Bachelor in Physics University of Lorraine, Metz, France
1989 – 1991	Master in Physics and Material Science University of Lorraine, Metz, France
1991 – 1993	Ph.D. thesis in Physics and Mechanical Engineering *Title Contribution to the study of structure and thermodynamics* of liquid metals by the integral equations theory" University of Lorraine, Metz, France (Advisors: Prof. J-L.. Bretonnet)
1993 – 1998	Habilitation in Physics, University of Lorraine, Metz

Professional experience:

1992 – 1994	Junior Lecturer in Physics and Material Science University of Lorraine, Metz, France
1994 – 2006	Senior Lecturer in Physics and Material Science University of Lorraine, Metz, France
2006 – present	Full Professor in Physics and Chemistry of solids University Grenoble Alps Grenoble Institute of technology (Grenoble-INP), Grenoble, France

Awards and functions

2006 – Present	Reviewer for ANR, DFG, NUS Syngapour
2009 – 2012	Director of International Relation and student exchange of PHELMA School UGA-Grenoble-INP, Grenoble France
2013 – 2019	Head of Thermodynamic, modelling and optimization of processes (TOP) research group SIMAP Laboratory,UGA-Grenoble-INP, Grenoble France
2011 – present	Editorial Board Member of Scientific Reports (Nature)
2018 – 2021	Member of the Scientific Board, GDR ModMat (Modelling on Materials)
2019 – Present	International Scientific Board Member Lquid and Amorphous Metals (LAM) international Conference
2019	Member of the Organizing committee Lquid and Amorphous Metals International Conference (LAM17), Lyon, France
2019	Member of the Organizing committee Diffusion in Solid and Liquid (DSL) international Conference
2019 – present	Member of the chairs Machine learning for mAterial desiGN and Efficient sysTems (MAGNET)
2019 – Present	Member of the Scientific Board, Industry 4.0 division Multidisciplinary Institute of Artificial Intelligence (MIAI) https://miai.univ-grenoble-alpes.fr/, University Grenoble Alps, Grenoble, France
2020 – present	Editorial Board Member of Metals (MDPI)
2021 – Present	Member of the Scientific Board Common research Laboratory: SIMAP and C-TEC Constellium, Grenoble France
2022 –present	Member of the Scientific Committee of DIADEM DIscovery Acceleration for the Deployment of Emerging Materials, National Exploratory Research Program (2022 – 2029)

Areas of research

- Statistical physics, Condensed matter and materials science, especially disordered states of matter
- Computer simulation at the atomic scale and related machine learning tools
- Density function theory
- Relation between Structure and dynamics as well as thermodynamics of liquids, amorphous metals, and oxides
- Solidification mechanisms and nucleation phenomena in metallic melts
- Dynamic heterogeneity in glass forming materials
- Structure and dynamics metallic melts under high pressure

Ten selected publications

[1] S. Becker, E. Devijver, R. Molinier and **N. Jakse**,

Unsupervised topological learning approach of crystal nucleation in pure Tantalum,

Machine Learning and the Physical Sciences Workshop at the 35th Conference on Neural Information Processing Systems (NeurIPS 2021)

[2] F Demmel, L Hennet, **N Jakse**,

The intimate relationship between structural relaxation and the energy landscape of monatomic liquid metals,

Scientific Reports **11**, 11815 (2021).

[3] S. Becker, E. Devijver, R. Molinier, **N. Jakse**,

Glass-forming ability of elemental zirconium

Physical Review B **102**, 104205 (2020).

[4] E. Sondermann, **N. Jakse**, K. Binder, A. Mielke, D. Heuskin, F. Kargl, and A. Meyer,

Concentration dependence of interdiffusion in aluminum-rich Al-Cu melts,

Phys. Rev. B, **99**, 024204 (2019).

[5] A Pasturel, **N Jakse**,

Effect of pentagonal-coordinated surface on crystal nucleation of an undercooled melt,

Scientific Reports **8**, 14314 (2018).

[6] A. Pasturel, **N. Jakse**,

Atomic-scale structural signature of dynamic heterogeneities in metallic liquids,

npj Computational Materials **3** , 33 (2017).

[7] K. N. Lad, **N. Jakse**, A. Pasturel,

Signatures of fragile-to-strong transition in a binary metallic glass-forming liquid,

The Journal of Chemical Physics **136**, 104509 (2012).

[8] **N Jakse**, A Pasturel,

Glass forming ability and short-range order in a binary bulk metallic glass by ab initio molecular dynamics,

Applied Physics Letters **93**, 113104 (2008).

[9] **N. Jakse**, A. Pasturel,

Liquid-liquid phase transformation in silicon: evidence from first-principles molecular dynamics simulations,

Physical Review Letters **99**, 205702 (2007).

[10] **N Jakse**, A Pasturel,

Local order of liquid and supercooled zirconium by ab initio molecular dynamics,

Physical Review Letters **91**, 195501 (2003).