



# Justin DIRRENBERGER



Associate Professor at Cnam  
Membre junior at Institut universitaire de France  
PIMM Laboratory, Arts & Métiers/Cnam/CNRS  
151, boulevard de l'Hôpital, 75013 Paris, France  
+33 144246101  
justin.dirrenberger@lecnam.net  
<https://dirrenberger.net>

- EXPERTISE**      ◇ Mechanics of materials, architected materials, modelling, advanced manufacturing, innovation
- PROFESSIONAL EXPERIENCE**
- ◇ Co-Founder, TETMET, Paris, France (since May 2023)  
Development of the Adaptive Spatial Lattice Manufacturing (ASLM) process
  - ◇ Associate Professor, Conservatoire National des Arts et Métiers, Paris, France (since Sep. 2013)  
Researcher PIMM / Head of materials engineering graduate program CNAM
  - ◇ Co-Founder, XtreeE, Paris, France (since Sep. 2015)  
Technological solutions for large-scale additive manufacturing
  - ◇ Research Engineer, Centre des Matériaux, MINES-ParisTech, Evry, France (Oct. 2009 – June 2013)  
Computational homogenisation of mechanical and thermal properties of architected materials
  - ◇ Research Engineer, Carbon Services, Schlumberger Ltd., Clamart, France (Feb. – Aug. 2009)  
Study of Portland cement carbonation in the context of  $CO_2$  sequestration
  - ◇ Research Engineer, EPFL, Lausanne, Switzerland (Mar. – Aug. 2008)  
Modeling of the particle size distribution effect on mechanical properties in cement paste
  - ◇ Technician, Air Liquide Welding, St-Ouen-L'Aumône, France (Sep. 2005 – Sep. 2006)  
Spectroscopic characterization of arc-welding fumes
  - ◇ Technician, SNCF, Agence d'Essai Ferroviaire, Vitry-sur-Seine, France (Sep. 2004 – Sep. 2005)  
Metrology and quality control of electromechanical testing equipment
- EDUCATION**
- ◇ HDR in Engineering Sciences, Sorbonne Université, Paris (2018)
  - ◇ Ph.D. in Materials Science & Engineering, MINES-ParisTech, Paris (2012)  
Supervised by Prof. S. Forest and Prof. D. Jeulin
  - ◇ Diplôme d'ingénieur in Materials Science & Engineering, Polytech' Paris-Saclay, Orsay (2009)
  - ◇ M.Sc. in Materials Science & Engineering, Université Paris-Sud, Orsay (2009)
  - ◇ DUT in Applied Physics, Université Paris-Sud, Orsay (2006)
- AWARDS**
- ◇ Nomination at Institut universitaire de France (Oct. 2024)
  - ◇ FEMS Communication Award for Excellence in MSE, 1st runner-up (Jul. 2018)
  - ◇ Jean Rist medal from SF2M (Oct. 2017)
  - ◇ France-Australia Science Innovation Collaboration (FASIC) grant (Dec. 2016)
  - ◇ National Young Academic Researcher Grant (ANR JCJC) (2016 – 2021)
  - ◇ Doctoral scholarship from MINES-ParisTech (Oct. 2009 – Dec. 2012)
  - ◇ Research fellowship from EPFL, Lausanne, Switzerland (Mar. – Aug. 2008)
- SCIENTIFIC OUTPUT**
- ◇ 40 articles in international peer-reviewed journals
  - ◇ 12 papers in international peer-reviewed conference proceedings
  - ◇ 1 edited book, 14 scholarly book chapters, 2 patents
  - ◇ 54 invited lectures out of 100+ oral communications, seminars, workshops, etc.
- INNOVATION**
- ◇ Co-founded XtreeE in 2015 to develop and commercialize large-scale additive manufacturing solutions. As of 2024, the company counts 15 FTE staff and is valued at 17 M€.
  - ◇ Co-founded TETMET in 2023 to develop and commercialize the adaptive spatial lattice manufacturing (ASLM) process, enabling architected materials for the industrial world. As of 2024, the company counts 10 FTE staff and is valued at 17.5 M€.

- FUNDED RESEARCH PROJECTS
- ◇ EU-funded :
    - H2020-MSCA-COFUND-2020-REDI (H2020 MSCA, 2022-2027) with RMIT Europe
    - H2020-SC5-2018 WOOL2LOOP (2018-2022) with XtreeE, St-Gobain, TU Delft, Oulu University
    - H2020-FOF-2016 HINDCON (2016-2019) with XtreeE, Holcim, VIAS, SINTEF, Fraunhofer Institute
  - ◇ ANR-funded :
    - MIRACLES (2023-2027) with Université Grenoble-Alpes (SiMaP) and Université de Lorraine (LEM3)
    - REDESIGN4D (2021-2026) with Université Bretagne-Sud (IRDL) and INRAE
    - ModuFEET (2021-2025) with ENS Paris-Saclay (SATIE), Université de Lorraine (LEM3) and Safran
    - JCJC SCOLASTIC (2016-2021) with ArcelorMittal R&D
    - MAX-OASIS (2020-2024) with UPEM (MSME), ENS Paris-Saclay (LMT) and Sorbonne U (IJLRDA)
    - ALMARIS (2016-2020) with Onera (DMAS), UTT (LASMIS), Mines-ParisTech (CDM) and PolyShape
  - ◇ CNRS-funded :
    - PEPS INSIS (2019) with Université Grenoble Alpes (SiMaP) and Chimie Paris (IRCP)
    - F2M-CNRS APHORISME (2014-2015) with UPEM (MSME) and ENS-Cachan (LMT)
  - ◇ Other funding sources :
    - Institut Carnot Grant (2026-2029)
    - CNES R&T Grant with TETMET (2023)
    - CNES AVP Grant (2017, 2020)
    - CNES R&T Grant (2018-2019)
    - ENPC Research Grant (2015-2018)
    - HESAM Synergie Grant DEMOCRITE (2014-2015)
  - ◇ Total research funding since 2014 : 1.9 M€
  - ◇ Total research funding for the companies I created : 1.46 M€
- INTERNATIONAL MOBILITY
- ◇ 1-week visit to Czech TU in Prague, Czechia, March 2023, invited by Dr. Martin Důškař
  - ◇ 2-week visit to Monash University, RMIT University and Australian National University in Australia, December 2017, invited by the Australia Department of Defence and the French Embassy in Australia to represent France and CNRS (INSIS) at the EDTAS Symposium on Advanced Materials and Manufacturing
  - ◇ 4-week visit to Monash University (Clayton, Australia) in November and December 2016, invited by Dr. A. Molotnikov through a PHC FASIC grant.
  - ◇ 1-week visit to National University of Singapore in April 2016, invited by Prof. L. H. Poh
  - ◇ 1-week visit to Centre of Molecular and Macromolecular Studies of the Polish Academy of Sciences in Łódź, Poland in December 2015, invited by Prof. A. Gałęski
- ACADEMIC RESPONSIBILITIES
- ◇ Supervision of 15 PhD candidates (6 on-going), 7 postdocs, and 12 MSc students
  - ◇ Head of the materials engineering graduate program (MSc) at Cnam (2017-2024)
  - ◇ Elected board member at the academic council of Cnam (2018-2022)
  - ◇ Board member of GDR MéPhy (2021-), DIM MaTeRRE (2022-) and GDR Archi-Meta (2023-)
  - ◇ Member of Mécamat (2010- elected board member since 2016), Euromech (2010-), DGM (2023-) and SF2M (2011- education committee member).
- SCIENTIFIC EVENT ORGANIZATION
- ◇ Organizing chair of SF2M Annual Days in Nov. 2024 in Paris, France
  - ◇ Organizing chair of CMDS-14, Continuum Models and Discrete Systems in Jun. 2023 in Paris, France
  - ◇ Organizing chair of National Symposium on Mechanics of Materials in Jan. 2022 in Aussois, France
  - ◇ 6 times organizing chair of GdR MePhy meetings between 2022 and 2025 in Paris, France
  - ◇ Scientific committee member for the national conference Matériaux in Strasbourg, France, Dec. 2018
  - ◇ Organizing chair of an international workshop on architected materials in Paris, May 2012
  - ◇ Local organization staff for the ICMM2 conference in Paris, Sep. 2011
- OUTREACH ACTIVITIES
- ◇ Co-organization of a Tribunal for Future Generations at Cnam on the question *Should we still invent new materials?* as part of the annual days of the SF2M, Nov. 2024.
  - ◇ Participation in the mathematical podcast *Trajectoires #8* on AI use in mechanical design
  - ◇ Invited conference on AI use in materials science and engineering during Pint of Science Paris 2019.

## Justin Dirrenberger

Membre junior à l'Institut universitaire de France

Department of Materials Engineering

Conservatoire National des Arts et Métiers

292 rue Saint-Martin, 75003 Paris, France

Tel: (+33) 1 44 24 61 01

e-mail: [justin.dirrenberger@ensam.eu](mailto:justin.dirrenberger@ensam.eu)

website: <http://dirrenberger.net>

### Education:

Sorbonne Université, Habilitation à Diriger des Recherches (HDR), Engineering Sciences, 2018

Thesis Title: *Towards an Integrated Approach for the Development of Architected Materials*

Ecole des Mines de Paris, Ph.D., Materials Science & Engineering, 2012

Thesis Advisors: Prof. Samuel Forest, Prof. Dominique Jeulin

Thesis Title: *Effective Properties of Architected Materials*

Université Paris-Saclay, M.Sc. & Diplôme d'Ingénieur, Materials Science & Engineering, 2009

Thesis Title: *Durable Oil-Well Cement for Safe and Reliable CO<sub>2</sub> Storage*

### Professional Positions:

Institut universitaire de France, Paris, France

Membre junior, Innovation Chair, 2024-2029

Focus: *Research on smart lattice structures using ASLM technology*

TETMET, Paris, France

Co-founder & Scientific Advisor, 2023-present

Focus: *Disrupting manufacturing using lasers, robotics, and AI*

XtreeE, Rungis, France

Co-founder & Scientific Advisor, 2015-present

Focus: *Large-scale additive manufacturing technologies and services*

Conservatoire National des Arts et Métiers, Paris, France

Associate Professor of Materials Science, 2013-present

Focus: *Computational modelling of architected materials*

Armines, Paris, France

Research Engineer, 2013

Focus: *Computational modelling of the Payne effect in reinforced elastomers*

Centre des Matériaux, Ecole des Mines de Paris, Evry, France

Research Assistant, Computational Mechanics division, 2009-2012

Focus: *Homogenization of stochastic and deterministic architected materials*

SRPC, Schlumberger, Clamart, France

Research Engineer, Carbon services, 2009

Focus: *Mechanical and chemical characterization of carbonated cement used in CCS*

Laboratory of Construction Materials, EPFL, Lausanne, Switzerland

Research Assistant, Materials Science & Engineering, 2008

Focus: *Microstructural and mechanical characterization of early-age white cement*

Air Liquide Welding, Saint-Ouen-L'Aumône, France

Research Assistant, 2005-2006

Focus: *Cr(VI) characterization in welding fumes using XRF and ICP-MS*

SNCF, Vitry-sur-Seine, France

Metrology technician, 2004-2005

Focus: *Qualification of metrological equipment for the rail industry*

#### Awards & Honors:

Membre junior IUF, Innovation Chair	2024
FEMS Communication Award for Excellence in MSE, 1 <sup>st</sup> runner-up	2018
SF2M Jean Rist medal	2017
Mines-ParisTech Doctoral scholarship	2009
EPFL Research fellowship	2008

#### Leadership Positions:

Team leader, <a href="#">CoMet team</a> , PIMM laboratory	2024-Present
Co-Founder, <a href="#">TETMET SAS</a>	2023-Present
Nominated member, Conseil National des Universités, <a href="#">CNU 33</a>	2023-Present
Board member, <a href="#">DIM MaTeRRe</a>	2022-Present
Board member, <a href="#">GDR ARCHI-META</a>	2022-Present
Board member, <a href="#">GDR MéPhy</a>	2021-Present
Committee member, Education committee, SF2M	2018-Present
Elected member, Academic council, CNAM	2018-2022
Graduate Program Director, Materials Science & Engineering, CNAM	2017-2024
Elected board member, Mécamat	2016-2024
Elected member, UMR board, PIMM UMR 8006	2015-2017
Co-Founder, <a href="#">XtreeE SAS</a>	2015-Present

#### Principal Research Interests:

Mechanics of materials; computational design; additive manufacturing; architected materials; multiphysics coupling; computational homogenization; sustainability; crystal plasticity; mathematical morphology; laser processing; composites; cementitious materials; fatigue; durability.

#### Scientometric Summary:

1. Journal Articles (Refereed / Proceedings / Under Review / Citations) – 40 / 12 / 1 / 6100
2. h-index: 26
3. i10-index: 39
4. Book Chapters – 14
5. Edited Books – 1
6. Patents (awarded and pending) – 2
7. Invited and Plenary Lectures – 54
8. Postdoctoral Researchers (Past/Current) – 6/1
9. Ph.D. Students (Graduated/Current) – 9/6
10. M.Sc. Students (Graduated/Current) – 12/0
11. Undergraduate Researchers (Past/Current) – 8/0

#### Professional Societies:

Mécamat (2010-)

Euromech (2010-)

Société Française de Métallurgie et Matériaux (SF2M) (2013-)

Deutsche Gesellschaft für Materialkunde (DGM) (2023-)

List of publication and lectures attached at the end of this document

References available upon request

## Research Funding

(\*\*indicates I am PI. For projects where I am not PI, only funds under my control are listed)

**Current: (1.400 M€)**

Funding Source and Project Title	Period Covered	Total Funding
Carnot projet structurant CRIC-AMI "Architected materials under impact" (PI: P. Viot, Arts et Métiers, U Bordeaux)	01/2026-12/2029	214 800 €
**Paris Region PhD2025 « Eco-conception et optimisation aidée par l'IA de matériaux architecturés produits via ASLM »	10/2025-10/2028	120 000 €
**Internal AAP PIMM « Eco-conception et optimisation aidée par l'IA de matériaux architecturés produits via ASLM »	10/2025-10/2028	30 000 €
ANR PRC MIRACLES « Microtreillis résilients inspirés d'analogues en plasticité cristalline » (PI: S. Berbenni, CNRS, U Lorraine)	01/2024-12/2027	159 000 €
**Contrat doctoral Université Franco-Allemande (KIT) « Architecturation de matériaux obtenus par fabrication additive »	10/2023-10/2026	120 000 €
**Contrat doctoral Université Paris-Saclay « Modélisation des interconnexions par mousses métalliques »	10/2023-10/2026	120 000 €
**Stellantis "Computational design of multistable origami structures for car application"	01/2023-12/2026	40 000 €
H2020-MSCA-COFUND-2020 REDI "RMIT European Doctoral Innovators" (project led by RMIT)	03/2022-02/2027	255 712 €
ESA MOON-COMP « Lunar 3D printing of composite materials for energy dissipation » (PI: A. Le Duigou, U Bretagne-Sud)	03/2022-09/2025	163 440 €
ANR PRCE ModuFEET « Conception de modules d'électronique de puissance fiables sous contraintes électrique, électromagnétique et thermique » (PI: D. Labrousse, CNAM)	10/2021-09/2026	23 296 €
ANR PRC REDESIGN4D « Matériaux composites adaptatifs obtenus par machine learning et impression 4D » (PI: A. Le Duigou, U Bretagne-Sud)	10/2021-09/2026	154 000 €

**Past: (1.015 M€)**

<b>Funding Source and Project Title</b>	<b>Period Covered</b>	<b>Total Funding</b>
ANR PRC MAX-OASIS « Matériaux architecturés exotiques, ondes, anisotropie, instabilités » (PI: N. Auffray, U Gustave Eiffel)	09/2019-09/2023	175 000 €
**CNES AAP R&T « Matériaux architecturés par traitement laser localisé »	10/2021-09/2022	50 000 €
**ANR JCJC SCOLASTIC “Systematic computational optimization and local laser processing of steel-based architected materials”	07/2016-06/2021	250 000 €
**Contrat Doctoral Spécifique Normalien « Propriétés mécaniques de treillis auxétiques hybrides »	09/2017-07/2021	120 000 €
ANR PRCE ALMARIS « Architecturation laser de matériaux superélastiques » (PI: C. Davoine, ONERA)	07/2016-12/2020	156 000 €
CNRS Projet exploratoire « Matériaux architecturés par fabrication additive » (co-PI: R. Dendievel, U Grenoble & F. Prima, ENSCP)	03/2019-12/2019	6 000 €
**CNES AAP R&T « Optimisation de matériaux architecturés pour application LALS »	03/2017-11/2019	46 000 €
**Ambassade de France en Australie « French-Australia Science Innovation Collaboration (FASIC) grant »	10/2016-12/2016	3 500 €
**CNES Avant-projet R&T « Matériaux architecturés »	09/2016-12/2016	12 000 €
**Lafarge-Holcim chair at Ecole des Ponts fund « Fabrication additive de matériaux cimentaires à grande échelle »	09/2015-09/2018	30 000 €
**F2M Grant « Approche holiste de la chiralité dans les métamatériaux architecturés » (co-PI: N. Auffray, U Paris-Est, M. Poncelet, ENS-Cachan)	11/2014-11/2015	50 000 €
**HESAM Université Synergie grant « Démonstrateur technologique pour une fabrication additive à grande échelle » (DEMOCRITE)	06/2014-06/2015	120 000 €

**Classroom Teaching Record at Conservatoire National des Arts et Métiers (\* denotes co-taught)**

Course No.	Course Title	Credits	Enrollment
<b>2025-2026 Academic Year</b>			
USMA2D	Composite materials and structures	2	10
<b>2024-2025 Academic Year</b>			
USMA2D	Composite materials and structures	2	11
MTX104	High performance composite materials	2	10
<b>2023-2024 Academic Year</b>			
USMA1M	Literature review project	2	10
USMA27	Selection of materials and processes	2	22
USMA28	Additive manufacturing and optimal design*	2	22
USMA2D	Composite materials and structures	3	22
USMA2G	Project of expertise in materials*	3	22
<b>2022-2023 Academic Year</b>			
MTX104	High performance composite materials	6	15
USMA1E	Structure of materials*	2	12
USMA1M	Literature review project	2	12
USMA1R	Strength of materials	2	22
USMA21	Metal forming processes*	2	22
USMA27	Selection of materials and processes	2	21
USMA28	Additive manufacturing and optimal design*	2	21
USMA2D	Composite materials and structures	3	21
USMA2G	Project of expertise in materials*	3	21
<b>2021-2022 Academic Year</b>			
MTX001	Introduction to materials technology*	3	20
UTC405	Fundamentals of materials*	3	30
USMA1C	Thermodynamics of materials*	4	22
USMA1E	Structure of materials*	2	22
USMA1H	Physical metallurgy*	3	22
USMA1M	Literature review project	2	22
USMA1R	Strength of materials	2	21
USMA21	Metal forming processes*	2	21
USMA25	Industrial seminar	1	21
USMA27	Selection of materials and processes	2	20
USMA28	Additive manufacturing and optimal design*	2	20
USMA2D	Composite materials and structures	3	20
USMA2G	Project of expertise in materials*	3	20
<b>2020-2021 Academic Year</b>			
MTX001	Introduction to materials technology*	3	18
MTX104	High-performance composite materials	6	8
MTX111	Materials for aerospace applications	3	36
UTC405	Fundamentals of materials*	3	25
USMA1C	Thermodynamics of materials*	4	21
USMA1E	Structure of materials*	2	21
USMA1H	Physical metallurgy*	3	21
USMA1M	Literature review project	2	21

Course No.	Course Title	Credits	Enrollment
USMA21	Metal forming processes*	2	20
USMA1R	Strength of materials	2	20
USMA25	Industrial seminar	1	20
USMA27	Selection of materials and processes	2	17
USMA28	Additive manufacturing and optimal design*	2	17
USMA2D	Composite materials and structures	3	17
USMA2G	Project of expertise in materials*	3	17
<b>2019-2020 Academic Year</b>			
MTX001	Introduction to materials technology*	3	23
MTX104	High-performance composite materials	6	11
MTX111	Materials for aerospace applications	3	36
UTC405	Fundamentals of materials*	3	25
USMA1C	Thermodynamics of materials*	4	20
USMA1E	Structure of materials*	2	20
USMA1H	Physical metallurgy*	3	20
USMA1M	Literature review project	2	20
USMA1R	Strength of materials	2	17
USMA21	Metal forming processes*	2	17
USMA25	Industrial seminar	1	17
<b>2018-2019 Academic Year</b>			
MTX001	Introduction to materials technology*	3	18
MTX104	High-performance composite materials	6	8
MTX111	Materials for aerospace applications	3	36
UTC405	Fundamentals of materials*	3	20
USMA1C	Thermodynamics of materials*	4	17
USMA1E	Structure of materials*	2	17
USMA1H	Physical metallurgy*	3	17
USMA1M	Literature review project	2	17
<b>2017-2018 Academic Year</b>			
MTX103	Fundamentals of materials*	6	12
MTX104	High-performance composite materials	6	9
MTX111	Materials for aerospace applications	3	36
MTX231	Advanced materials technology*	6	7
MMC105	Physical metallurgy*	6	9
MMC116	Advanced metallurgy*	6	9
<b>2016-2017 Academic Year</b>			
MTX103	Fundamentals of materials*	6	13
MTX104	High-performance composite materials	6	29
MTX111	Materials for aerospace applications	3	36
MTX231	Advanced materials technology*	6	7
MMC105	Physical metallurgy*	6	33
<b>2015-2016 Academic Year</b>			
MTX103	Fundamentals of materials*	6	11
MTX104	High-performance composite materials	6	27
MTX111	Materials for aerospace applications	3	35

Course No.	Course Title	Credits	Enrollment
MMC105	Physical metallurgy*	6	47
MTX231	Advanced materials technology*	6	11
MMC114	Continuum mechanics*	6	19
MMC116	Advanced metallurgy*	6	12
<b>2014-2015 Academic Year</b>			
MTX001	Introduction to materials technology*	3	25
MTX103	Fundamentals of materials*	6	10
MTX104	High-performance composite materials	6	17
MTX111	Materials for aerospace applications	3	36
MTX231	Advanced materials technology*	6	8
MMC105	Physical metallurgy*	6	51
MMC114	Continuum mechanics*	6	15
<b>2013-2014 Academic Year</b>			
MTX001	Introduction to materials technology*	3	32
MTX103	Fundamentals of materials*	6	11
MTX104	High-performance composite materials	6	15
MTX111	Materials for aerospace applications	3	35
MTX231	Advanced materials technology*	6	10
MMC105	Physical metallurgy*	6	51

#### Teaching Record at other universities (vacations)

University	Course Title / Activity	Hours	Program
<b>2025-2026 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
<b>2024-2025 Academic Year</b>			
ENSCI-Les Ateliers	Entrance examination	8	Dipl. Créateur Industriel
<b>2023-2024 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
Mines Paris-PSL	Introduction to architected materials	7	MSc. PSL Materials Sci & Eng
<b>2022-2023 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENSCI-Les Ateliers	Entrance examination	8	Dipl. Créateur Industriel
<b>2021-2022 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENPC	Aluminium for construction	3	MS Génie Civil Européen
ENSA Paris-Malaquais	Final project examination	12	Dipl. architecte
ENSCI-Les Ateliers	Entrance examination	20	Dipl. Créateur Industriel
Ecole Boule	Final project examination	8	DNMADE Métiers d'Art
<b>2020-2021 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENPC	Aluminium for construction	3	MS Génie Civil Européen
ENSA Paris-Malaquais	Final project examination	8	Dipl. architecte
ENSCI-Les Ateliers	Entrance examination	12	Dipl. Créateur Industriel
Ecole Boule	Final project examination	8	DNMADE Métiers d'Art

University	Course Title / Activity	Hours	Program
<b>2019-2020 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENPC	Aluminium for construction	3	MS Génie Civil Européen
Ecole Polytechnique	Instabilities in architected materials	3	Cycle ingénieur 3A - PHY582
ENSCI-Les Ateliers	Entrance examination	16	Dipl. Créateur Industriel
INSA Rouen	Architected materials & 3D Printing	3	Cycle ingénieur 3A
<b>2018-2019 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENPC	Materials & 3D Printing	8	MS Design by data
ENSMP	Introduction to computational homogenization	7	MS DMS
ENSCI-Les Ateliers	Entrance examination	16	Dipl. Créateur Industriel
ENSA Paris-Malaquais	Final project examination	8	Dipl. architecte
ENSA Paris-Belleville	Project tutoring	6	Dipl. architecte
ENSA Marne-la-Vallée	Sustainability & construction materials	4	DPEA Archi. post-carbone
<b>2017-2018 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENPC	Materials & 3D Printing	8	MS Design by data
ENSMP	Introduction to computational homogenization	7	MS DMS
ENSCI-Les Ateliers	Entrance examination	16	Dipl. Créateur Industriel
ENSA Marne-la-Vallée	Sustainability & construction materials	4	DPEA Archi. post-carbone
<b>2016-2017 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENPC	Materials & 3D Printing	24	MS Design by data
ENSMP	Introduction to computational homogenization	7	MS DMS
ENSA Paris-Malaquais	Topology optimization	12	Dipl. architecte
ENSA Marne-la-Vallée	Sustainability & construction materials	4	DPEA Archi. post-carbone
<b>2015-2016 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENSMP	Physics and mechanics of random media	12	Cycle ingénieur 2A/3A
ENSA Paris-Malaquais	Final project examination	8	Dipl. architecte
ENSA Marne-la-Vallée	Sustainability & construction materials	4	DPEA Archi. post-carbone
<b>2014-2015 Academic Year</b>			
Arts et Métiers	Mechanics of composite materials	3	Master MAGIS
ENSMP	Physics and mechanics of random media	12	Cycle ingénieur 2A/3A
ENSMP	Solid mechanics (practical course)	16	Cycle ingénieur 2A
ENSA Paris-Malaquais	Final project examination	8	Dipl. architecte
<b>2013-2014 Academic Year</b>			
ENSMP	Physics and mechanics of random media	12	Cycle ingénieur 2A/3A
ENSMP	Solid mechanics (practical course)	16	Cycle ingénieur 2A
ENSA Paris-Malaquais	Final project examination	8	Dipl. architecte

## Student Advising

### *Post-Doctoral Researchers:*

<b>Name</b>	<b>Context</b>	<b>Period</b>
Yanda Chen	ANR MIRACLES	06/2025-12/2026
Guangjin Mou	ANR REDESIGN4D	03/2024-03/2025
Monia Grabow	ESA 4DPrinting	09/2022-09/2023
Federica Ongaro	CNES R&T project	11/2018-11/2020
Pierre Lapouge	ANR SCOLASTIC	03/2017-01/2019
Sébastien Turcaud	F2M APHORISME	03/2015-09/2015

### *Graduate Students:*

<b>Student</b>	<b>Alma Mater</b>	<b>Thesis Type</b>	<b>Period</b>
Emeline Jacques	UCLouvain	PhD	10/2025-Present
Cameron Nelson	CNAM	PhD	10/2025-Present
Nicolas Lallemand	U Lorraine	PhD	03/2024-Present
Nadjib Degdeg	U Paris-Saclay	PhD	10/2023-Present
Oumayma Elmaalouf	Arts & Métiers	PhD	10/2023-Present
Joey Tallon	RMIT/CNAM	PhD	06/2022-Present
Pierre-Louis Pichard	U Bretagne-Sud	PhD	10/2022-12/2025
Kéliane Mégret	CNAM	PhD	11/2022-10-2025
Pei Sun	U Paris-Saclay	MSc	03/2023-09/2023
Rachel Azulay	Arts & Métiers	PhD	09/2020-09/2023
Antoine-Emmanuel Viard	Arts & Métiers	PhD	09/2017-03/2023
Zhige Wang	Arts & Métiers	PhD	09/2019-12/2022
Hugo Mouchard	Arts & Métiers	MSc	10/2021-07/2022
Tristan Chenevez	Arts & Métiers	MSc	10/2021-07/2022
Killian Soyez	Sigma Clermont	MSc	02/2021-09/2021
Frédéric Albertini	Arts & Métiers	PhD	09/2017-07/2021
Flavien Ghiglione	EPF	MSc	02/2020-07/2020
Romain Duballet	Ecole des Ponts	PhD	09/2015-09/2019
Théophile Catois	Sorbonne U	MSc	03/2019-09/2019
Shaobo Yang	Arts & Métiers	PhD	09/2015-12/2018
Noushin Torabian Dehkordi	Arts & Métiers	PhD	09/2014-06/2017
Regina Mutz	KIT/Arts & Métiers	MSc	02/2016-07/2016
Antonios Choleridis	Arts & Métiers	MSc	02/2015-07/2015
Yoann Angilella	Polytech'Paris-Saclay	MSc	03/2014-08/2014
Guillaume Langlet	CNAM	MSc	02/2014-07/2014
Lucas Callen	Arts & Métiers	MSc	02/2014-07/2014

**Undergraduate Students internships:**

<b>Student</b>	<b>Alma Mater</b>	<b>Study year</b>	<b>Period</b>
Niki Nouri	KIT/Arts & Métiers	M1	04/2017-07/2017
Paul Defiez	KIT/Arts & Métiers	M1	04/2015-07/2015
Patrick Moll	KIT/Arts & Métiers	M1	04/2014-07/2014
Matthieu Berteaux	KIT/Arts & Métiers	M1	04/2014-07/2014
Christoph Hellmann	KIT/Arts & Métiers	M1	04/2014-07/2014
Jacqueline Oliveira Gouveia	U Federal de Itajuba	M1	01/2014-06/2014
Nadja Gaudillière	ENSA Paris Malaquais	L3	03/2014-07/2014
Nanjunda S. Velu	NIT Karnataka	L3	05/2014-07/2014

**Awards & Honors received by Dirrenberger Graduate Students:**

<b>Student Name</b>	<b>Awards</b>	<b>Year</b>
Rachel Azulay	Fondation Arts et Métiers <b>Pierre Bézier Prize</b>	2025
Pierre-Louis Pichard	SAMPE Europe <b>1<sup>st</sup> Prize for Ph.D. Category</b>	2024
Joey Tallon	ICM-14 <b>Best Poster Award</b>	2023
Kéliane Mégret	ICM-14 <b>2<sup>nd</sup> Best Poster Award</b>	2023
Antoine-Emmanuel Viard	Mécamat <b>Best Poster Award</b>	2019
Frédéric Albertini	Académie Française <b>Jean Walter Zellidja Grant</b>	2019
	PHC FASIC <b>Travel Grant</b>	2018
Noushin Torabian Dehkordi	Fondation Arts et Métiers <b>Pierre Bézier Prize</b>	2017
Regina Mutz	FEMS Euromat Junior <b>Best Poster Award</b>	2016

**Research Group Alumni****Past Postdoctoral Researchers**

Dr. Guangjin Mou (currently a researcher at HKUST)  
 Dr. Monia Grabow (currently a research engineer at CompositIC)  
 Dr. Federica Ongaro (currently a researcher at Università di Trento)  
 Dr. Pierre Lapouge (currently a research engineer at TETMET)  
 Dr. Sébastien Turcaud (currently an associate at Meridiam)

**Past Ph.D. Students**

Dr. Pierre-Louis Pichard  
 Dr. Kéliane Mégret (currently a research engineer at Stellantis)  
 Dr. Rachel Azulay (currently a research engineer at TETMET)  
 Dr. Zhige Wang (currently a research engineer at Subsea7)  
 Dr. Antoine-Emmanuel Viard (currently Professor of Mechanics at Académie de Versailles)  
 Dr. Frédéric Albertini (currently Associate Professor at Université Paris-Saclay)  
 Dr. Romain Duballet (currently Chief Product Officer at XtreeE)  
 Dr. Shaobo Yang (currently a research engineer in China)  
 Dr. Noushin Torabian Dehkordi (currently a research engineer at ArcelorMittal)

### **Past M.Sc. Students**

Pei Sun (currently a Ph.D. candidate at U Picardie)  
Tristan Chenevez (currently a research engineer at AMVALOR)  
Hugo Mouchard (currently an engineer at Coelys)  
Killian Soyez (currently Professor of Mathematics at Académie de Créteil)  
Dr. Flavien Ghiglione (currently a research engineer at Safran)  
Théophile Catois (currently a stage manager in the film industry)  
Regina Mutz (currently a quality engineer at Innovative Sensor Technology AG)  
Dr. Antonios Choleridis (currently a research engineer at ArcelorMittal)  
Yoann Angilella (currently an engineer at Carrier)  
Guillaume Langlet (currently a consultant at Teamsquare)  
Lucas Callen (currently a civil engineer)

### **Service Contributions**

#### **Ph.D. Committees (33)**

<b>Student</b>	<b>University</b>	<b>Date</b>	<b>Role</b>
Adrien Nusslé	Université de Montpellier	06/2026	Examiner
Guilherme Selicani	Technical University of Denmark	05/2026	Reviewer
Thibaud Derieux	Université Paris-Saclay	12/2025	Reviewer
Pierre-Louis Pichard	Université Bretagne-Sud	12/2025	Examiner
Kéliane Mégret	Cnam	10/2025	Examiner
Rafael Viano	Ecole Polytechnique	10/2025	Reviewer
Great Oguguo	Ecole Polytechnique	05/2025	Reviewer
Claude Lajoie Ifounga	Université de Rouen Normandie	12/2024	Reviewer
Grégoire Markey	UTC	12/2024	Reviewer
Mélanie Horvath	UC Louvain (Belgium)	12/2024	Examiner
Caroline Vibert	Arts & Métiers	11/2023	Examiner
Guangjin Mou	Sorbonne Université	10/2023	Reviewer
Rachel Azulay	Arts & Métiers	09/2023	Examiner
Zahra Hooshmand Ahoor	Ecole Polytechnique	04/2023	Reviewer
Antoine-Emmanuel Viard	Arts & Métiers	03/2023	Examiner
Adeline Petit	Université d'Orléans	01/2023	Examiner
Zhige Wang	Arts & Métiers	12/2022	Examiner
Caroline Widomski	Université Paris-Saclay	12/2022	Reviewer
Marie Pirotais	Arts & Métiers	12/2022	Examiner
Aymen Danoun	Université de Bordeaux	11/2022	Examiner
Malik Spahic	Université Bretagne-Sud	07/2022	Examiner
Minghao Bi	RMIT (Australia)	04/2022	Reviewer
Frédéric Albertini	Arts & Métiers	07/2021	Examiner
Binghua Ma	Sorbonne Université	05/2021	Reviewer
Thibault Dassonville	Université Paris-Est	10/2020	Reviewer
Zhen Yin	McGill University (Canada)	04/2020	Reviewer
Tianyu Zhang	Université Paris-Est	12/2019	Reviewer
Othmane Zerhouni	Ecole Polytechnique	11/2019	Reviewer
Romain Duballet	Ecole des Ponts	09/2019	Examiner

Shaobo Yang	Arts & Métiers	12/2018	Examiner
Fadhel Chatti	ISAE SupAéro	12/2018	Examiner
Edgar Chuta Caceres	ESTP	06/2018	Examiner
Noushin Torabian Dehkordi	Arts & Métiers	06/2017	Examiner

### Recruitment committees (6)

MCF at Cnam (section 28/33/60) in 2021  
MCF at Université Paris-Saclay (section 28/33) in 2020  
MCF at CentraleSupélec (section 60) in 2019  
MCF at Cnam (section 28/33/60) in 2016  
MCF at INSA Lyon (section 33/60) in 2016  
MCF at Cnam (section 28/33) in 2014

### Organizing committee chair

GDR MéPhy – [Cohesive granular materials](#) – 09/10/2025, Paris, France  
GDR MéPhy – [Functional Architected Materials by Design](#) – 23/05/2025, Paris, France  
JA2024 SF2M – [L’empreinte matériaux : enjeux et solutions](#) – 18-21/11/2024, Paris, France  
GDR MéPhy – [Physics and Mechanics of Additive Manufacturing](#) – 12/11/2024, Paris, France  
GDR MéPhy – [Surface tension, geometry and soft solids](#) – 13/10/2023, Paris, France  
CMDS-14 – [Continuum models and discrete systems symposium](#) – 26-30/06/2023, Paris, France  
GDR MéPhy – [Mechanics and Physics of biological surfaces](#) – 21/03/2023, Paris, France  
GDR MéPhy – [Friction & Slender Structures](#) – 10/10/2022, Paris, France  
GDR MéPhy – [Wave propagation in heterogeneous materials](#) – 15/06/2022, Paris, France  
Mécamat 2021+1 – [Mécanique des matériaux architecturés](#) – 17-21/01/2022, Aussois, France

### Editorial responsibilities

Springer Book Series in [Adaptive Environments](#), editorial board member, since 2017

### Reviews of Publications and Proposals:

#### Proposals

*Ad hoc reviewer*, Agence Nationale de la Recherche, France  
*Ad hoc reviewer*, CNRS, France  
*Ad hoc reviewer*, DFG, German Research Foundation, Germany  
*Ad hoc reviewer*, Canadian Foundation for Innovation, Canada  
*Ad hoc reviewer*, Natural Sciences and Engineering Research Council of Canada, Canada  
*Ad hoc reviewer*, Dutch Research Council, the Netherlands  
*Ad hoc reviewer*, GAČR, Czech Science Foundation, Czech Republic  
*Ad hoc reviewer*, Swiss National Science Foundation, Switzerland  
*Ad hoc reviewer*, American University of Sharjah, United Arab Emirates  
*Ad hoc reviewer*, European Innovation Council, Europe  
*Ad hoc reviewer*, European Research Council, Europe

#### Journals (70)

*4D Printing*  
*ACS Applied Energy Materials*  
*ACS Applied Materials & Interfaces*  
*Additive Manufacturing*  
*Additive Manufacturing Letters*  
*Advanced Engineering Materials*  
*Advanced Functional Materials*  
*Advanced Intelligent Systems*  
*Advanced Intelligent Discovery*

*Advanced Materials*  
*Advanced Materials Technologies*  
*Applied Research*  
*Architectural Science Review*  
*Archive of Applied Mechanics*  
*Archives of Civil and Mechanical Engineering*  
*Archives of Computational Methods in Engineering*  
*ASCE Journal of Structural Design and Construction Practice*  
*ASME Journal of Applied Mechanics*  
*ASME Journal of Engineering Materials and Technology*  
*Automation in Construction*  
*Biomaterials*  
*BMC Biotechnology*  
*Cement and Concrete Research*  
*Cleaner Engineering and Technology*  
*Cleaner Materials*  
*Composite Science & Technology*  
*Composite Structures*  
*Composites Part C*  
*Computational Materials Science*  
*Computers & Structures*  
*Comptes-Rendus de l'Académie des Sciences*  
*Construction and Building Materials*  
*Discover Mechanical Engineering*  
*Engineering Applications of Artificial Intelligence*  
*Engineering Fracture Mechanics*  
*Engineering Structures*  
*Engineering with Computers*  
*European Journal of Environmental and Civil Engineering*  
*European Journal of Mechanics / A Solids*  
*Extreme Mechanics Letters*  
*Finite Elements in Analysis and Design*  
*Frontiers in Material*  
*Innovative Infrastructure Solutions*  
*International Journal of Engineering Science*  
*International Journal of Mechanical Science*  
*International Journal of Solids and Structures*  
*Journal of Materials Engineering and Performance*  
*Journal of Materials Research and Technology*  
*Journal of Manufacturing and Materials Processing*  
*Journal of the Mechanical Behavior of Biomedical Materials*  
*Materials*  
*Materials & Design*  
*Materials Chemistry and Physics*  
*Materials Letters*  
*Materials Science and Engineering A*  
*Materials Science and Engineering B*  
*Materials Science & Technology*  
*Materials Today Communications*  
*Meccanica*  
*Mechanics of Materials*  
*MRS Communications*

*Optics and Laser Technology*  
*Powder Technology*  
*Programmable Materials*  
*Results in Engineering*  
*Small Science*  
*Sustainable Materials and Technologies*  
*Thin-Walled Structures*  
*Transport in Porous Media*  
*Zeitschrift für Angewandte Mathematik und Mechanik*

**Expert mandated by the Department of Higher Education and Innovation for evaluating “Crédit Impôt Recherche” applications from 2015 to 2022.**

**Outreach activities:**

Conference – [Les nouveaux procédés de fabrication](#) – 16/05/2025, Fontainebleau, France  
Organizing TGF – [Faut-il encore inventer des matériaux ?](#) – 20/11/2024, Paris, France  
Pint of Science – Développement par IA de matériaux architecturés – 20/05/2019, Paris, France  
Podcast – [AI use in mechanical design](#) – Trajectoires #8 30/06/2017, Paris, France

# Scientific output

Justin DIRRENBARGER, Associate Professor (HDR), Cnam

June 3, 2026

Journal Impact Factors are obtained from Web of Science Journal Citation Reports for the publication year.

Number of citations are obtained from Google Scholar.

\* indicates young researchers under my supervision at the time of publication.

## A Refereed journal articles (40)

- A40. K. Danas, N. Auffray, **J. Dirrenberger**, J. Réthoré, G. Sebald, A. Le Duigou, A. Mbiakop, and T. Lacroix. Multifunctional Architected and Composite Materials by Design: Geometry, Experiments, Coupling and Multiscale Challenges. *Mechanics and Industry*. (IF=1.2), 2026. *in press*
- A39. J. Tallon\*, J. Noronha, **J. Dirrenberger**, and A. Molotnikov. Low Cycle Repetitive Loading of Ti-6Al-4V-Epoxy Composite Lattice Structures for Enhanced Energy Dissipation and Damage Tolerance. *Advanced Engineering Materials*. (IF=3.3), 2026, e70920. <https://doi.org/10.1002/adem.70920>
- A38. O. Elmaalouf\*, P. Peyre, S. Dietrich, C. Dupuy, and **J. Dirrenberger**. Laser Scan-Path-Driven Texture Selection and Sharpening in PBF-LB/M of Inconel 625. *Journal of Materials Processing Technology*. (IF=7.5), 2026, 119332. <https://doi.org/10.1016/j.jmatprotec.2026.119332>
- A37. K. Megret\*, **J. Dirrenberger**, J. Monnoyer, C. Sollogoub, B. Goislard de Monsabert, L. Fernandez, S. Delalande, and S. Viollet. An energetic approach for comparing monomaterial compliant bistable mechanisms. *Journal of Mechanical Design* (IF=2.9), volume 147(12), 2025, 123301. <https://doi.org/10.1115/1.4068549> (1 citation)
- A36. F. Albertini\*, **J. Dirrenberger**, C. Sollogoub, A. Molotnikov, J. Adrien, and E. Maire. Hybrid auxetics: Postponing failure with elastomer infiltration of Ti-6Al-4V lattices. *International Journal of Mechanical Sciences*. (IF=9.4), volume 306, 2025, 110704. <https://doi.org/10.1016/j.ijmecsci.2025.110704> (3 citations)
- A35. P.-L. Pichard\*, T. Le Gagne, L. Maheo, **J. Dirrenberger**, U. Lafont, and A. Le Duigou. 3D printing strategies and mechanical performance assessment of continuous basalt-fibre/PA12 composites with high fibre volume fraction. *Polymer Testing*. (IF=6.0), volume 150, 2025, 108936. <https://doi.org/10.1016/j.polymertesting.2025.108936> (3 citations)
- A34. P.-L. Pichard\*, L. Maheo, **J. Dirrenberger**, M. Castro, U. Lafont, and A. Le Duigou. Efficient energy-dissipative bioinspired architected composite materials with high mechanical properties. *Additive Manufacturing* (IF=11.1), volume 109, 2025, 104875. <https://doi.org/10.1016/j.addma.2025.104875> (9 citations)
- A33. **J. Dirrenberger**, P. Lapouge, R. Azulay, P. Evers, and T. Vroemen. Adaptive Spatial Lattice Manufacturing (ASLM): A Novel Approach to Efficient Lattice Structure Production. *Materials & Design* (IF=7.6), volume 249, 2025, 113553 <https://doi.org/10.1016/j.matdes.2024.113553> (4 citations)
- A32. A. Le Duigou, M. Grabow\*, F. Scarpa, J. Deschamps, C. Combescure, K. Labstie, **J. Dirrenberger**, M. Castro, and U. Lafont. Bioinspired 4D Printed Tubular/Helicoidal Shape Changing Metacomposites for Programmable Structural Morphing. *Advanced Materials Technologies* (IF=6.4), volume 10(2), 2025, 2400237 <https://doi.org/10.1002/admt.202400237> (11 citations)
- A31. M. V. Vellayappan, F. Duarte, C. Sollogoub, **J. Dirrenberger**, A. Guinault, J. E. Frith, H. C. Parkington, A. Molotnikov, and N. R. Cameron. Creation of Grooved Tissue Engineering Scaffolds from Architected Multilayer Polymer Composites by a Tuneable One-Step Degradation Process. *Small* (IF=13), volume 20(43), 2024, 2401902 <https://doi.org/10.1002/smll.202401902> (6 citations)

- A30. C. Vibert\*, A.-L. Dupont, **J. Dirrenberger**, R. Passas, D. Ricard, and B. Fayolle. Relationship between chemical and mechanical degradation of aged paper: fibre versus fibre-fibre bonds. *Cellulose* (IF=5.7), volume 31, 2024, pp.1855-1873 <https://doi.org/10.1007/s10570-023-05683-x> (15 citations)
- A29. R. Azulay\*, C. Combescure, **J. Dirrenberger**. Instability-induced pattern generation in architected materials—A review of methods. *International Journal of Solids and Structures* (IF=3.67), volume 274, 2023, 112240 <https://doi.org/10.1016/j.ijsolstr.2023.112240> (14 citations)
- A28. M. V. Vellayappan, F. Duarte, C. Sollogoub, **J. Dirrenberger**, A. Guinault, J. E. Frith, H. C. Parkington, A. Molotnikov, and N. R. Cameron. Fabrication of architected biomaterials by multilayer co-extrusion and additive manufacturing. *Advanced Functional Materials* (IF=19.92), 2023, 2301547 <https://doi.org/10.1002/adfm.202301547> (22 citations)
- A27. A. Le Duigou, M. Grabow\*, M. Castro, R. Toumi, M. Ueda, R. Matsuzaki, Y. Hirano, **J. Dirrenberger**, F. Scarpa, R. D'Elia, K. Labstie, and U. Lafont. Thermomechanical performance of continuous carbon fibre composite materials produced by a modified 3D printer. *Heliyon* (IF=3.78), volume 9, 2023, e13581 <https://doi.org/10.1016/j.heliyon.2023.e13581> (23 citations)
- A26. Z. Wang\*, O. Bouaziz, **J. Dirrenberger**, and P. Lapouge. Corrugation reinforced architected materials by direct laser hardening: a study of geometrically induced work hardening in steel. *Steel Research International* (IF=2.10), 2023, 2200695 <https://doi.org/10.1002/srin.202200695> (3 citation)
- A25. Z. Wang\*, **J. Dirrenberger**, P. Lapouge, S. Dubent, H. Jabir, and V. Michel. Microstructure Evolution and Mechanical Properties of AISI 430 Ferritic Stainless Steel Strengthened Through Laser Carburization. *Journal of Engineering Materials and Technology* (IF=1.63), volume 144(4), 2022, 041005 <https://doi.org/10.1115/1.4055025> (3 citations)
- A24. Z. Wang\*, **J. Dirrenberger**, P. Lapouge, and S. Dubent. Laser treatment of 430 ferritic stainless steel for enhanced mechanical properties. *Materials Science and Engineering A* (IF=5.23), volume 831, 2022, 142205 <https://doi.org/10.1016/j.msea.2021.142205> (32 citations)
- A23. F. Albertini\*, **J. Dirrenberger**, C. Sollogoub, T. Maconachie, T. Leary, and A. Molotnikov. Experimental and computational analysis of the mechanical properties of composite auxetic lattice structures. *Additive Manufacturing* (IF=11.00), volume 47, 2021, 102351 <https://doi.org/10.1016/j.addma.2021.102351> (77 citations)
- A22. I. Muñoz, J. Alonso-Madrid, M. Menéndez-Muñiz, M. Uhart, J. Canou, C. Martin, M. Fabritius, L. Calvo, L. Poudalet, R. Cardona, H. Lombois-Burger, N. Vlasopoulos, C. Bouyssou, **J. Dirrenberger**, A. Papacharalampopoulos, and P. Stavropoulos. Life cycle assessment of integrated additive–subtractive concrete 3D printing. *The International Journal of Advanced Manufacturing Technology* (IF=2.93), volume 112, 2021, pp. 2149-2159 <https://doi.org/10.1007/s00170-020-06487-0> (91 citations)
- A21. A.-E. Viard\*, **J. Dirrenberger**, and S. Forest. Propagating material instabilities in planar architected materials. *International Journal of Solids and Structures* (IF=3.21), volume 202, 2020, pp.532-551 <https://doi.org/10.1016/j.ijsolstr.2020.05.027> (14 citations)
- A20. F. Albertini\*, **J. Dirrenberger**, A. Molotnikov, and C. Sollogoub. Computational investigation of the effective mechanical behavior for 3D pre-buckled auxetic lattices. *ASME Journal of Applied Mechanics* (IF=2.77), volume 86, 2019, 111003 <https://doi.org/10.1115/1.4044542> (23 citations)
- A19. F. dell'Isola, P. Seppecher, M. Spagnuolo, E. Barchiesi, F. Hild, T. Lekszycki, I. Giorgio, L. Placidi, U. Andreaus, M. Cuomo, S.R. Eugster, A. Pfaff, K. Hoschke, R. Langkemper, E. Turco, R. Sarikaya, A. Misra, M. De Angelo, F. D'Annibale, A. Bouterf, X. Pinelli, A. Misra, B. Desmorat, M. Pawlikowski, C. Dupuy, P. Peyre, M. Laudato, L. Manzari, P. Göransson, C. Hesch, S. Hesch, P. Franciosi, **J. Dirrenberger**, F. Maurin, Z. Vangelatos, C. Grigoropoulos, V. Melissinaki, M. Farsari, W. Muller, B.E. Amali, C. Liebold, G. Ganzosch, P. Harrison, R. Drobnicki, L. Igumnov, F. Alzahrani, and T. Hayat. Advances in pantographic structures: design, manufacturing, models, experiments and image analyses. *Continuum Mechanics and Thermodynamics* (IF=2.14), volume 31, 2019, pp. 1231-1282 <https://doi.org/10.1007/s00161-019-00806-x> (252 citations)
- A18. M. De Angelo, M. Spagnuolo, F. D'Annibale, A. Pfaff, K. Hoschke, A. Misra, C. Dupuy, P. Peyre, **J. Dirrenberger**, and M. Pawlikowski. The macroscopic behavior of pantographic sheets depends mainly on their

- microstructure: experimental evidence and qualitative analysis of damage in metallic specimens. *Continuum Mechanics and Thermodynamics* (IF=2.14), volume 31, 2019, pp. 1181-1203 <https://doi.org/10.1007/s00161-019-00757-3> (78 citations)
- A17. Z.P. Wang, L.H. Poh, Y. Zhu, **J. Dirrenberger**, and S. Forest. Systematic design of tetra-petals auxetic structures with stiffness constraint. *Materials and Design* (IF=5.77), volume 170, 2019, n. 107669 <https://doi.org/10.1016/j.matdes.2019.107669> (91 citations)
- A16. P. Lapouge\*, **J. Dirrenberger**, F. Coste, and M. Schneider. Laser heat treatment of martensitic steel and dual-phase steel with high martensite content. *Materials Science and Engineering A* (IF=4.08), volume 752, 2019, pp. 128-135 <https://doi.org/10.1016/j.msea.2019.03.016> (33 citations)
- A15. E. Ernault\*, **J. Dirrenberger**, E. Richaud, and B. Fayolle. Prediction of stress induced by heterogeneous oxidation in epoxy/amine networks. *Polymer Degradation and Stability* (IF=3.78), volume 162, 2019, pp. 112-121 <https://doi.org/10.1016/j.polymdegradstab.2019.02.019> (36 citations)
- A14. R. Duballet\*, O. Baverel, and **J. Dirrenberger**. Space truss masonry walls with robotic mortar extrusion. *Structures* (IF=1.65), volume 19, 2019, pp.41-47 <http://doi.org/10.1016/j.istruc.2018.11.003> (36 citations)
- A13. S. Yang\*, **J. Dirrenberger**, E. Monteiro, and N. Ranc. Representative volume element size determination for viscoplastic and dissipative properties in polycrystalline materials. *International Journal of Solids and Structures* (IF=2.79), volume 158, 2019, pp. 210-219 <https://doi.org/10.1016/j.ijsolstr.2018.09.011> (25 citations)
- A12. F. dell'Isola, I. Giorgio, L. Placidi, M. Spagnuolo, P. Peyre, C. Dupuy, **J. Dirrenberger**, M. Pawlikowski, and L. Igumnov. Pantographic metamaterials: A view towards applications. *Materials Physics and Mechanics*, volume 42, 2019, pp. 637-645 [https://doi.org/10.18720/MPM.4252019\\_17](https://doi.org/10.18720/MPM.4252019_17) (6 citations)
- A11. R.A. Buswell, W.R. Leal de Silva, S.Z. Jones, and **J. Dirrenberger**. 3D printing using concrete extrusion: A roadmap for research. *Cement and Concrete Research* (IF=5.62), volume 112, 2018, pp. 37-49 <http://doi.org/10.1016/j.cemconres.2018.05.006> (1977 citations)
- A10. R. Duballet\*, O. Baverel, and **J. Dirrenberger**. Classification of building systems for concrete 3D printing. *Automation in Construction* (IF=4.03), volume 83, 2017, pp. 247-258 <http://doi.org/10.1016/j.autcon.2017.08.018> (322 citations)
- A9. N. Torabian\*, V. Favier, **J. Dirrenberger**, F. Adamski, S. Ziaei-Rad, and N. Ranc. Correlation of the high and very high cycle fatigue response of ferrite based steels with strain rate-temperature conditions. *Acta Materialia* (IF=6.04), volume 134, 2017, pp. 40-52 <http://doi.org/10.1016/j.actamat.2017.05.064> (69 citations)
- A8. Z.P. Wang, L.H. Poh, **J. Dirrenberger**, S. Forest, and Y. Zhu. Isogeometric shape optimization of smoothed petal auxetic structures via computational periodic homogenization. *Computational Methods in Applied Mechanics and Engineering* (IF=4.44), volume 323, 2017, pp. 250-271 <http://doi.org/10.1016/j.cma.2017.05.013> (150 citations)
- A7. N. Torabian\*, V. Favier, S. Ziaei-Rad, **J. Dirrenberger**, F. Adamski, and N. Ranc. Thermal Response of DP600 Dual-Phase Steel under Ultrasonic Fatigue Loading. *Materials Science and Engineering: A* (IF=2.76), volume 677, 2016, pp. 97-105 <http://dx.doi.org/10.1016/j.msea.2016.09.025> (36 citations)
- A6. A. Bironeau\*, **J. Dirrenberger**, C. Sollogoub, G. Miquelard-Garnier and S. Roland. Evaluation of morphological representative sample sizes for nanolayered polymer blends. *Journal of Microscopy* (IF=1.69), volume 264(1), 2016, pp.48-58 <http://dx.doi.org/10.1111/jmi.12415> (28 citations)
- A5. C. Gosselin, R. Duballet, Ph. Roux, N. Gaudillière, **J. Dirrenberger** and Ph. Morel. Large-Scale 3D Printing of Ultra-High Performance Concrete– A New Processing Route for Architects and Builders. *Materials & Design* (IF=4.36), volume 100, 2016, pp. 102-109 <http://dx.doi.org/10.1016/j.matdes.2016.03.097> (1288 citations)
- A4. N. Auffray, **J. Dirrenberger** and G. Rosi. A complete description of bi-dimensional anisotropic strain-gradient elasticity. *International Journal of Solids and Structures* (IF=2.08), volume 69-70, 2015, pp. 195-206 <http://dx.doi.org/10.1016/j.ijsolstr.2015.04.036> (142 citations)

- A3. **J. Dirrenberger**, S. Forest and D. Jeulin. Towards gigantic RVE sizes for stochastic fibrous networks. *International Journal of Solids and Structures* (**IF=2.21**), volume **51**(2), 2014, pp. 359-376 <http://dx.doi.org/10.1016/j.ijsolstr.2013.10.011> (**166 citations**)
- A2. **J. Dirrenberger**, S. Forest and D. Jeulin. Effective elastic properties of auxetic microstructures: anisotropy and structural applications. *International Journal of Mechanics and Materials in Design* (**IF=1.20**), volume **9**(1), 2013, pp. 21-33 <http://dx.doi.org/10.1007/s10999-012-9192-8> (**226 citations**)
- A1. **J. Dirrenberger**, S. Forest and D. Jeulin. Elastoplasticity of auxetic materials. *Computational Materials Science* (**IF=1.88**), volume **64**, 2012, pp. 57-61 <http://dx.doi.org/10.1016/j.commatsci.2012.03.036> (**117 citations**)

## B Authored or edited book (1)

- O1. F. Willot, **J. Dirrenberger**, S. Forest, D. Jeulin, and A. V. Cherkaev. *Continuum Models and Discrete Systems. CMDS-14, Paris, France, June 26-30, 2023*, Springer, 2024, 278 p., ISBN: 9783031586644 <https://link.springer.com/book/9783031586644>.

## C Refereed conference proceedings (12)

- R12. N. Nouri, S. Dietrich, V. Schulze, P. Lapouge, and **J. Dirrenberger**. Influence of Tempering Transformation Induced Plasticity (T-TRIP) on the Evolution of Residual Stresses in Laser Heat Treated 50CrMo4 Steel. *QDE 2025: Proceedings of the 3rd International Conference on Quenching and Distortion Engineering*, May 6–7, 2025, Vancouver, Canada, pp. 42-50 <https://doi.org/10.31399/asm.cp.qde2025p0042>
- R11. M. Menéndez-Muñiz, M. Chantín, C. R. Vintila, M. Fabritius, C. Martin, L. Calvo, L. Poudalet, J. Canou, M. Uhart, A. Papacharalampopoulos, P. Stavropoulos, N. O. E. Olsson, J. A. Tenorio, J. Alonso-Madrid, **J. Dirrenberger**, and I. Muñoz. Concrete hybrid manufacturing: A machine architecture. *Procedia CIRP* (**IF=2.10**), volume **97**, 2021, pp. 51-58 <https://doi.org/10.1016/j.procir.2020.07.003> (**23 citations**)
- R10. M. V. Vellayappan, C. Sollogoub, **J. Dirrenberger**, A. Molotnikov, and N. Cameron. Additive manufacturing of multilayered polymer composites produced by co-extrusion for cardiac patches application. *International Conference on Nanostructured Materials (NANO 2020)*, Jul 2020, Melbourne, Australia (1 page) <https://search.informit.org/doi/10.3316/INFORMIT.208502967005710>
- R9. F. Ongaro\*, F. Masson, K. Mathis, and **J. Dirrenberger**. Architected materials for space applications: a computational tool for the parametric optimization of a three-dimensional lattice subjected to stiffness constraints *8th European Conference for Aeronautics and Aerospace Sciences (EUCASS)*, Jul 2019, Madrid, Spain (15 pages) <https://doi.org/10.13009/EUCASS2019-167> (**2 citations**)
- R8. R. Duballet\*, O. Baverel, and **J. Dirrenberger**. Treillis spatiaux en extrusion robotisée de matériaux cimentaires. *DiXite3dPrint : Fabrication Additive pour la Construction. Quelle Actualité Nationale*, Ecole des Ponts ParisTech, Jan 2019, Champs-sur-Marne, France (1 page) <https://hal-enpc.archives-ouvertes.fr/hal-02119339>
- R7. N. Gaudillière, C. Bouyssou, A. Mallet, P. Roux, M. Zakeri, R. Duballet, and **J. Dirrenberger**. Bénéfices temps et matière dans le recours au processus d'impression 3D béton pour des applications dans le domaine de la construction. *DiXite3dPrint : Fabrication Additive pour la Construction. Quelle Actualité Nationale*, Ecole des Ponts ParisTech, Jan 2019, Champs-sur-Marne, France (1 page) <https://hal-enpc.archives-ouvertes.fr/hal-02119509>
- R6. **J. Dirrenberger**. From Architected Materials to the Development of Large-scale Additive Manufacturing. *SPOOL*, volume **4**(1), 2017, ISSN 2215-0900 (4 pages) <https://doi.org/10.7480/spool.2017.1.1910> (**2 citations**)
- R5. N. Torabian\*, V. Favier, S. Ziaei-Rad, F. Adamski, **J. Dirrenberger** and N. Ranc. Self-Heating Measurements for a Dual-Phase Steel under Ultrasonic Fatigue Loading for Stress Amplitudes below the Conventional Fatigue Limit. *Procedia Structural Integrity*, volume **2**, 2016, pp. 1191-1198 (8 pages) <http://dx.doi.org/10.1016/j.prostr.2016.06.152> (**9 citations**)

- R4. G. Rosi, N. Auffray and **J. Dirrenberger**. Wave propagation in the framework of strain gradient continua: the example of hexachiral materials. *22ème Congrès Français de Mécanique*, Lyon, France, August 2015 (3 pages) <http://hdl.handle.net/2042/57379>
- R3. N. Gaudillière\*, **J. Dirrenberger**, O. Baverel and C. Sollogoub. Additive Manufacturing for the Development of an Assembling System for Gridshells. In *What's the Matter? Materiality and Materialism at the Age of Computation*, 2014, ed. M. Voyatzaki, pp. 195-210, ISBN: 978-960-89320-6-7 (16 pages)
- R2. **J. Dirrenberger**, S. Forest and D. Jeulin. Effective properties of auxetics made using selective laser melting. *Matériaux & Techniques*, volume **100**, S1, 2012, pp. 172-173 (2 pages)
- R1. **J. Dirrenberger**, S. Forest, D. Jeulin and C. Colin. Homogenization of periodic auxetic materials. *Procedia Engineering*, volume **10**, 2011, pp. 1852-1857 <http://dx.doi.org/10.1016/j.proeng.2011.04.307> (**97 citations**)

## D Scholarly book chapters (14)

- B14. N. Gaudillière-Jami, and **J. Dirrenberger**. Non-uniform truss modelling and energy consumption in adaptive space lattice manufacturing for steel structures . In *Structures and Architecture*, eds. M. Rinke, M. F. Hvejsel. CRC Press, London, 2025, pp 1727-1734, ISBN: 9781041111399. <https://doi.org/10.1201/9781003658641-205> (**1 citation**)
- B13. **J. Dirrenberger**. Matériaux architecturés élaborés par fabrication additive. In *Techniques de l'Ingénieur* [M4920]. Editions TI, 2025. <https://doi.org/10.51257/a-v1-m4920>
- B12. F. Ongaro\*, F. Masson, K. Mathis, and **J. Dirrenberger**. Continuum modelling of orthotropic hexatruss lattice materials: effective stiffness and experimental validation. In *Continuum Models and Discrete Systems. CMDS-14, Paris, France, June 26-30, 2023*, eds. F. Willot, J. Dirrenberger, S. Forest, D. Jeulin, and A. V. Cherkaev. Springer, 2024, pp. 105-125, ISBN: 9783031586644 [https://doi.org/10.1007/978-3-031-58665-1\\_8](https://doi.org/10.1007/978-3-031-58665-1_8) (**1 citation**)
- B11. R. Duballet, R. Mesnil, N. Ducoulombier, P. Carneau, L. Demont, M. Motamedi, O. Baverel, J.-F. Caron, and **J. Dirrenberger**. Free deposition printing for space truss structures. In *DC 2020: Second RILEM International Conference on Concrete and Digital Fabrication*, eds. F. P. Bos, S. S. Lucas, R. J. M. Wolfs, and T. A. M. Salet. Springer, 2020, pp. 873-882, ISBN: 9783030499167 [https://doi.org/10.1007/978-3-030-49916-7\\_85](https://doi.org/10.1007/978-3-030-49916-7_85) (**16 citations**)
- B10. N. Gaudillière, **J. Dirrenberger**, R. Duballet\*, C. Bouyssou, A. Mallet, Ph. Roux, M. Zakeri. Industrialising Concrete 3D Printing: Three Case Studies. In *Design Transactions, Rethinking Information Modelling for a New Material Age*, eds. B. Sheil, M. Ramsgaard Thomsen, M. Tamke, and S. Hanna. UCL Press, 2020, pp. 158-165 <https://doi.org/10.14324/111.9781787355026> (**16 citations**)
- B9. F. dell'Isola, T. Lekszycki, M. Spagnuolo, P. Peyre, C. Dupuy, F. Hild, A. Misra, E. Barchiesi, E. Turco, and **J. Dirrenberger**. Experimental Methods in Pantographic Structures. In *Discrete and Continuum Models for Complex Metamaterials*, eds. F. dell'Isola, and D. J. Steigmann. Cambridge University Press, 2020, pp. 263-297, ISBN: 9781107087736 <https://doi.org/10.1017/9781316104262> (**70 citations**)
- B8. K. Kuzmenko, N. Gaudillière\*, A. Feraille, **J. Dirrenberger**, and O. Baverel. Assessing the Environmental Viability of 3D Concrete Printing Technology. In *Impact: Design With All Senses*, eds. C. Gengnagel, et al. Springer, 2020, pp. 517-528 [https://doi.org/10.1007/978-3-030-29829-6\\_40](https://doi.org/10.1007/978-3-030-29829-6_40) (**37 citations**)
- B7. N. Gaudillière, R. Duballet\*, C. Bouyssou, A. Mallet, Ph. Roux, M. Zakeri, and **J. Dirrenberger**. Building Applications Using Lost Formworks Obtained Through Large-Scale Additive Manufacturing of Ultra-High-Performance Concrete. In *3D Concrete Printing Technology*, eds. J.G. Sanjayan, A. Nazari, and B. Nematollahi. Butterworth-Heinemann, 2019, pp. 37-58 <https://doi.org/10.1016/B978-0-12-815481-6.00003-8> (**51 citations**)
- B6. **J. Dirrenberger**, S. Forest and D. Jeulin. Computational homogenization of architected materials. In *Architected Materials in Nature and Engineering*, eds. Y. Estrin, Y. Bréchet, J. Dunlop, P. Fratzl. Springer Series in Materials Science, volume **282**, Springer, 2019, pp. 89-139 [https://doi.org/10.1007/978-3-030-11942-3\\_4](https://doi.org/10.1007/978-3-030-11942-3_4) (**19 citations**)

- B5. N. Gaudillière, R. Duballet\*, C. Bouyssou, A. Mallet, Ph. Roux, M. Zakeri, and **J. Dirrenberger**. Large-Scale Additive Manufacturing of Ultra-High-Performance Concrete of Integrated Formwork for Truss-Shaped Pillars. In *Robotic Fabrication in Architecture, Art and Design 2018*, eds. J. Willmann, P. Block, M. Hutter, K. Byrne, T. Schork. ROBARCH 2018. Springer, 2019, pp. 459–472 [http://dx.doi.org/10.1007/978-3-319-92294-2\\_35](http://dx.doi.org/10.1007/978-3-319-92294-2_35) (**76 citations**)
- B4. **J. Dirrenberger**. From Architected Materials to Large-Scale Additive Manufacturing. In *Robotic Building*, ed. H. Bier. Springer Series in Adaptive Environments, Springer International Publishing, 2018, pp. 79–96 [http://dx.doi.org/10.1007/978-3-319-70866-9\\_4](http://dx.doi.org/10.1007/978-3-319-70866-9_4) (**5 citations**)
- B3. R. Duballet\*, O. Baverel, and **J. Dirrenberger**. Design of Space Truss Based Insulating Walls for Robotic Fabrication in Concrete. In *Humanizing Digital Reality*, eds. K. De Rycke, et al., Springer, Singapore, 2018, pp. 453–461 [http://dx.doi.org/10.1007/978-981-10-6611-5\\_39](http://dx.doi.org/10.1007/978-981-10-6611-5_39) (**20 citations**)
- B2. N. Torabian\*, V. Favier, S. Ziaei-Rad, **J. Dirrenberger**, F. Adamski and N. Ranc. Calorimetric Studies and Self-Heating Measurements for a Dual-Phase Steel Under Ultrasonic Fatigue Loading. In *Fatigue and Fracture Test Planning, Test Data Acquisitions, and Analysis*, ASTM STP1598, Z. Wei, K. Nikbin, P. McKeighan, and G. Harlow, Eds., ASTM International, West Conshohocken, PA, 2017, pp. 81–93 <http://dx.doi.org/10.1520/STP159820160053> (**9 citations**)
- B1. B. Lecampion, J. Vanzo, F.J. Ulm, B. Huet, C. Germy, I. Khalfallah and **J. Dirrenberger**. Evolution of Portland cement mechanical properties exposed to CO<sub>2</sub>-rich fluids: Experimental investigation at different scales. In *MPPS 2011, Symposium on Mechanics and Physics of Porous Solids : A tribute to Pr. Olivier Coussy, Marne-la-Vallée, 18-20 avril 2011*, 2011, 406p <http://hal.archives-ouvertes.fr/hal-00595113/> (**22 citations**)

## E Patents (2)

- P2. K. Megret\*, J. Monnoyer, M. Jaspard, **J. Dirrenberger**, S. Viollet, C. Sollogoub, S. Delalande, L. Fernandez, and B. Goisard de Monsabert. Equipement bistable et monobloc. Patent applied for on 17 April 2024. <https://patents.google.com/patent/FR3161401A1/> (**5 citations**)
- P1. K. Mathis, F. Masson, and **J. Dirrenberger**. Amortisseur auxétique. Patent number FR3071290B1. Patent applied for on 19 September 2017, published on 13 September 2019 <https://patents.google.com/patent/FR3071290B1/> (**4 citations**)

## F Invited lectures in international refereed conferences (7)

- K7. **J. Dirrenberger**. Adaptive Space Lattice Manufacturing as an efficient alternative to 3D printing. *8th Built Environment Additive Manufacturing BE-AM, Formnext*, **Invited keynote lecture**, Frankfurt, Germany, November 2023.
- K6. **J. Dirrenberger**. Architected materials obtained through advanced manufacturing. *3rd International Conference on Additive Fabrication of Composites*, **Invited keynote lecture**, Tokyo, Japan, December 2022.
- K5. **J. Dirrenberger**. Large-scale additive manufacturing: Challenges and opportunities for innovation. *1st RILEM International Conference on Concrete and Digital Fabrication*, **Invited keynote lecture**, Zurich, Switzerland, September 2018.
- K4. **J. Dirrenberger**. Bio-inspired hybrid architected materials obtained through additive manufacturing. *Euromat Junior Conference, FEMS Communication Award for Excellence in MSE lecture*, **Invited lecture**, Budapest, Hungary, July 2018.
- K3. **J. Dirrenberger**, F. Albertini\*, C. Sollogoub, and A. Molotnikov. Bio-inspired architected hybrid lattice structures. *International workshop in honor of Dominique Jeulin, Physics and mechanics of random structures: from morphology to material properties*, **Invited lecture**, Oléron, France, June 2018.
- K2. **J. Dirrenberger**. Large-scale additive manufacturing as a disruptive force in the construction industry. *1st Asia-Pacific International Conference on Additive Manufacturing*, **Invited lecture**, Melbourne, Australia, December 2017.

- K1. **J. Dirrenberger**. From Materials Engineering to the Computational Development of Architected Materials. *What's the Matter- Materiality and Materialism at the Age of Computation*, **Invited keynote lecture**, Barcelona, Spain, September 2014.

## G Invited lectures in national refereed conferences (4)

- N4. **J. Dirrenberger**, S. Yang\*, E. Monteiro, and N. Ranc. Representative volume element size determination for viscoplastic polycrystalline materials. *4èmes Journées Matériaux Numériques*, **Invited keynote lecture**, Amboise, France, June 2019.
- N3. **J. Dirrenberger**, Y. Qi, and A. Molotnikov. Preliminary results on the mechanical behavior of hybrid architected lattice structures. *Journées annuelles de la SF2M*, **Jean Rist medal Invited keynote lecture**, Lyon, France, October 2017.
- N2. **J. Dirrenberger**. Mécanique des matériaux auxétiques. **Invited lecture**, *Mini-symposium « Mécanique des matériaux architecturés », 12ème Colloque National en Calcul de Structures*, Giens, France, May 2015.
- N1. **J. Dirrenberger**, S. Forest and D. Jeulin. Effective properties of auxetics made using selective laser melting. *Journées annuelles de la SF2M*, **Invited lecture**, Paris, France, October 2012.

## H International refereed conference lectures (36)

- C36. E. Jacques\*, M. Farag, P. Lapouge, **J. Dirrenberger**, and A. Simar. Adaptive Spatial Lattice Manufacturing (ASLM): Scale effects for aluminum alloys. *20th European Mechanics of Materials Conference (EMMC20)*, Florence, Italy, May 2026.
- C35. **J. Tallon\***, **J. Dirrenberger**, and A. Molotnikov. Mechanical Behaviour of Laser Powder Bed Fusion (PBF LB/M) Titanium Epoxy Hybrid Lattices. *8th conference of the Combined Australian Materials Societies (CAMS2024)*, Adelaide, Australia, December 2024.
- C34. **J. Dirrenberger**. Computational Design of a New Generation Payload Adapter Fitting using Adaptive Spatial Lattice Manufacturing. *European Conference on Spacecraft Structures, Materials and Environmental Testing (ECSSMET 2024)*, ESTEC, Noordwijk, the Netherlands, September 2024.
- C33. R. Azulay\*, C. Combescure, and **J. Dirrenberger**. A Group-Theoretic Approach for Predicting Bifurcation Patterns in Architected Materials. *17th U.S. National Congress on Computational Mechanics (US-NCCM17)*, Albuquerque, USA, July 2023.
- C32. R. Azulay\*, C. Combescure, and **J. Dirrenberger**. Predicting bifurcation patterns in architected materials - A group theoretic approach. *14th International Conference on the Mechanical Behaviour of Materials (ICM14)*, Santiago, Chile, July 2023.
- C31. R. Azulay\*, C. Combescure, and **J. Dirrenberger**. Predicting post-bifurcated patterns in architected materials using group theory. *ECCOMAS Young Investigators Conference (YIC 2023)*, Porto, Portugal, June 2023.
- C30. A.-E. Viard\*, **J. Dirrenberger**, and S. Forest. Controlling the propagation of material instabilities through architecture. *7th International Conference on Material Modelling (ICMM7)*, Cape Town, South Africa, December 2022.
- C29. R. Azulay\*, C. Combescure, and **J. Dirrenberger**. Symmetry Groups of Post-bifurcated Honeycomb Structures. *11th European Solid Mechanics Conference (ESMC11)*, Galway, Ireland, July 2022.
- C28. R. Azulay\*, C. Combescure, and **J. Dirrenberger**. Symmetry Groups of Post-bifurcated Honeycomb Structures. *18th European Mechanics of Materials Conference (EMMC18)*, Oxford, United Kingdom, April 2022.
- C27. **A.-E. Viard\***, **J. Dirrenberger**, and S. Forest. Propagating material instabilities in periodic media. *29th International Workshop on Computational Mechanics of Materials (IWCM29)*, Dubrovnik, Croatia, September 2019.

- C26. F. Ongaro\*, K. Mathis, F. Masson, and **J. Dirrenberger**. Architected materials for space applications: a computational tool for the parametric optimization of a three-dimensional lattice subjected to stiffness constraints. *8th European Conference for Aeronautics and Space Sciences (EUCASS 2019)*, Madrid, Spain, July 2019.
- C25. A.-E. Viard\*, **J. Dirrenberger**, and S. Forest. Propagating material instabilities in periodic media. *148th Annual Meeting and Exhibition TMS2019 Conference*, San Antonio, TX, USA, March 2019.
- C24. P. Lapouge\*, **J. Dirrenberger**, and M. Schneider. Architected steel sheets through localized laser processing. *148th Annual Meeting and Exhibition TMS2019 Conference*, San Antonio, TX, USA, March 2019.
- C23. **J. Dirrenberger**, S. Yang\*, E. Monteiro, and N. Ranc. Representative volume element size determination for viscoplastic polycrystalline aggregates. *SES 2018 - 55th Annual Technical meeting*, Madrid, Spain, October 2018.
- C22. **J. Dirrenberger**, F. Albertini\*, C. Sollogoub, and A. Molotnikov. Architected hybrid auxetic lattice structures. *IUTAM Symposium on Architected Materials Mechanics*, Chicago, IL, USA, September 2018.
- C21. N. Gaudillière, R. Duballet\*, C. Bouyssou, A. Mallet, Ph. Roux, M. Zakeri, and **J. Dirrenberger**. Large-Scale Additive Manufacturing of Ultra-High-Performance Concrete of Integrated Formwork for Truss-Shaped Pillars. *ROB-ARCH 2018*, Zurich, Switzerland, September 2018.
- C20. **J. Dirrenberger**, S. Yang\*, E. Monteiro, and N. Ranc. Representative volume element size determination for viscoplastic polycrystalline materials. *10th European Solid Mechanics Conference*, Bologna, Italy, July 2018.
- C19. **J. Dirrenberger**, S. Yang\*, E. Monteiro, and N. Ranc. Representative volume element size determination for viscoplastic polycrystalline materials. *Engineering Mechanics Institute Conference 2018*, Cambridge, MA, USA, May 2018.
- C18. **J. Dirrenberger**, S. Yang\*, E. Monteiro, and N. Ranc. Representative Volume Element Size for Viscoplastic Properties in Polycrystalline Copper. *16th European Mechanics of Materials Conference*, Nantes, France, March 2018.
- C17. S. Yang\*, N. Ranc, E. Monteiro and **J. Dirrenberger**. Intrinsic dissipation process during very high cycle fatigue tests on pure Copper. *7th International Conference on Very High Cycle Fatigue*, Dresden, Germany, July 2017.
- C16. **J. Dirrenberger**, Y. Qi, and A. Molotnikov. Bio-inspired architected hybrid lattice structures. *5th International Conference on Material Modelling (ICMM5)*, Rome, Italy, June 2017.
- C15. Z.P. Wang, L.H. Poh, **J. Dirrenberger**, Y. Zhu, and S. Forest. Designing Smoothed Petal Auxetic Structures Using Isogeometric Shape Optimization. *5th International Conference on Material Modelling*, Rome, Italy, June 2017.
- C14. A. Bironeau\*, **J. Dirrenberger**, C. Sollogoub, G. Miquelard-Garnier and S. Roland. Evaluation of morphologically representative sample sizes for nanolayered polymer blends. *15th European Mechanics of Materials Conference*, Brussels, Belgium, September 2016.
- C13. **J. Dirrenberger**. Representative Volume Element Size Determination for Viscoplastic Properties in Polycrystalline Aggregates. *10th Mechanics of Time-Dependent Materials Conference*, Paris, France, May 2016.
- C12. **J. Dirrenberger**, S. Forest and D. Jeulin. Towards Gigantic RVE sizes for 3D stochastic fibrous networks. *1st European-Latin-American Conference of Theoretical and Applied Mechanics*, La Havane, Cuba, February 2016.
- C11. N. Auffray, G. Rosi and **J. Dirrenberger**. Wave propagation in the framework of strain gradient continua. *French-German workshop on Extended continuum theories for the numerically efficient modeling of multi-scale phenomena*, Ruhr-Universität Bochum, Germany, September 2015.
- C10. **J. Dirrenberger**, S. Forest and D. Jeulin. Towards Gigantic RVE sizes for 3D stochastic fibrous networks. *9th European Solid Mechanics Conference*, Leganés-Madrid, Spain, July 2015.
- C9. G. Rosi, N. Auffray and **J. Dirrenberger**. Wave Propagation in Hexachiral Lattices Modeled as Strain Gradient Continua. *9th European Solid Mechanics Conference*, Leganés-Madrid, Spain, July 2015.

- C8. **J. Dirrenberger**. Representative Volume Element Size for Viscoplastic Properties in Face-Centered Cubic Metals. *4th International Conference on Material Modeling*, Berkeley, California, May 2015.
- C7. **J. Dirrenberger**, L. Callen\*, V. Favier and O. Castelnau. Computational Investigation of Micro-Macro Rate Sensitivity Equivalence in Polycrystalline Copper. *24th International Workshop on Computational Mechanics of Materials*, Madrid, Spain, October 2014.
- C6. N. Gaudillière\*, **J. Dirrenberger**, O. Baverel and C. Sollogoub. Additive Manufacturing for the Development of an Assembling System for Gridshells. *What's the Matter? Materiality and Materialism at the Age of Computation*, Barcelona, Spain, September 2014.
- C5. **J. Dirrenberger**, L. Callen\*, V. Favier and O. Castelnau. RVE size for viscoplastic properties in polycrystalline aggregates. *14th European Mechanics of Materials Conference*, Gothenburg, Sweden, August 2014.
- C4. **J. Dirrenberger**, S. Forest and D. Jeulin. Statistical determination of RVE sizes and effective properties for stochastic fibrous networks. *6th European Congress on Computational Methods in Applied Sciences and Engineering*, Vienna, Austria, September 2012.
- C3. **J. Dirrenberger**, S. Forest and D. Jeulin. Modelling of auxetic materials with periodic microstructure. *8th European Solid Mechanics Conference*, Graz, Austria, July 2012.
- C2. **J. Dirrenberger**, S. Forest and D. Jeulin. Elastoplasticity of auxetic materials. *21st International Workshop on Computational Mechanics of Materials*, Limerick, Ireland, August 2011.
- C1. **J. Dirrenberger**, S. Forest, D. Jeulin and C. Colin. Homogenization of periodic auxetic materials. *11th International Conference on Mechanical Behaviour of Materials*, Como, Italy, June 2011.

## I National refereed conference lectures (5)

- N5. **J. Dirrenberger**. Maîtriser le temps dans les matériaux architecturés. *Colloque IUF 2025 "Le Temps"*, Besançon, France, Juin 2025.
- N4. **J. Dirrenberger**. Adaptive Spatial Lattice Manufacturing (ASLM) - A Novel Approach to Efficient and Sustainable Lattice Structure. *Journées annuelles de la SF2M*, Paris, France, November 2024.
- N3. E. Ernault\*, **J. Dirrenberger**, E. Richaud, and B. Fayolle. Embrittlement and stress-strain field induced by oxidation: case of epoxy amine networks. *32nd PDDG (Polymer Degradation Discussion Group) conference*, Taormina, Italy, September 2017.
- N2. G. Rosi, N. Auffray and **J. Dirrenberger**. Wave propagation in the framework of strain gradient continua: the example of hexachiral materials. *22ème Congrès Français de Mécanique*, Lyon, France, August 2015.
- N1. **J. Dirrenberger**, S. Forest and D. Jeulin. RVE size determination for 3D stochastic fibrous networks. *Journées Matériaux Numériques*, Loches, France, February 2013.

## J Invited lectures (43)

- S43. **J. Dirrenberger**. Les nouveaux procédés de fabrication. **Invited lecture**, *Café des Sciences*, Fontainebleau, France, May 2025.
- S42. **J. Dirrenberger**. Architected materials obtained through advanced manufacturing. **Invited lecture**, *UCLouvain*, Louvain-la-Neuve, Belgium, December 2024.
- S41. **J. Dirrenberger**. Architected materials obtained through advanced manufacturing. **Invited lecture**, *KIT*, Karlsruhe, Germany, December 2023.
- S40. **J. Dirrenberger**. Architected materials obtained through advanced manufacturing. **Invited lecture**, *Saint-Gobain Research*, Aubervilliers, France, November 2023.
- S39. **J. Dirrenberger**. Architected materials obtained through advanced manufacturing. **Invited lecture**, *Arizona State University-PIMM workshop, Arts & Métiers*, Paris, France, June 2023.

- S38. **J. Dirrenberger**. Architected materials enabled by digital fabrication. **Invited lecture**, *Building Minds Symposium on Artificial Intelligence & Computational Design*, TU Delft, Delft, Netherlands, May 2023.
- S37. **J. Dirrenberger**. An overview of architected materials at PIMM. **Invited lecture**, *Department of Civil Engineering, Czech Technical University*, Prague, Czech Republic, March 2023.
- S36. A.-E. Viard, **J. Dirrenberger**, S. Forest. Controlling the propagation of material instabilities through architecture. **Invited lecture**, *Department of Civil Engineering, Czech Technical University*, Prague, Czech Republic, March 2023.
- S35. **J. Dirrenberger**. Recent highlights on architected materials PIMM. **Invited lecture**, *Texas A&M University-Arts & Métiers workshop, Arts & Métiers*, Paris, France, January 2023.
- S34. A.-E. Viard, **J. Dirrenberger**, S. Forest. Controlling the propagation of plastic instabilities in planar architected materials. **Invited lecture**, *WCPM, University of Warwick*, Warwick, UK, November 2020.
- S33. A.-E. Viard, **J. Dirrenberger**, S. Forest. Controlling the propagation of plastic instabilities in planar architected materials. **Invited lecture**, *MSSMat, CentraleSupélec*, Gif-sur-Yvette, France, June 2020.
- S32. A.-E. Viard, **J. Dirrenberger**, S. Forest. Controlling the propagation of plastic instabilities in planar architected materials. **Invited lecture**, *iMMC, Université Catholique de Louvain*, Louvain-la-Neuve, Belgium, November 2019.
- S31. **J. Dirrenberger**. Vers une approche intégrée pour le développement de matériaux architecturés. **Invited lecture**, *IRDL Laboratory*, Lorient, France, May 2019.
- S30. **J. Dirrenberger**. Additive manufacturing for architected materials. **Invited lecture** *Rencontres Franciliennes de Mécanique*, Dammarie-les-Lys, France, June 2018.
- S29. F. dell'Isola, M. Spagnuolo, C. Dupuy, P. Peyre, and **J. Dirrenberger**. Pantographic structures, an example of collaboration between France and Italy. *Réseau National de Connaissances*, **Invited lecture**, Paris, France, February 2018.
- S28. **J. Dirrenberger**, S. Forest, D. Jeulin, F. Willot, and M. Faessel. Representative Volume Element Size Determination for Elasticity & Viscoplasticity. **Invited lecture** *Colloque Mecamat 2018*, Aussois, France, January 2018.
- S27. **J. Dirrenberger**. From architected materials to the development of large-scale additive manufacturing. **Invited lecture** *UPEM*, Marne-la-Vallée, France, December 2017.
- S26. **J. Dirrenberger**. Hybrid architected materials: an example of fruitful collaboration between France and Australia. *AFRAN Forum*, **Invited keynote lecture**, Canberra, Australia, December 2017.
- S25. **J. Dirrenberger**. The future of architected materials: Opportunities for innovation and international collaboration. *EDTAS Advanced Materials & Manufacturing*, **Invited keynote lecture**, Melbourne, Australia, November 2017.
- S24. **J. Dirrenberger**, Y. Qi, and A. Molotnikov. Preliminary results on the mechanical behavior of bioinspired hybrid architected lattice structures. *Réseau National de Connaissances*, **Invited lecture**, Angers, France, June 2017.
- S23. **J. Dirrenberger**. From architected materials to the development of large-scale additive manufacturing. **Invited lecture** *TU Delft*, Delft, The Netherlands, November 2016.
- S22. **J. Dirrenberger**. From architected materials to the development of large-scale additive manufacturing. **Invited lecture** *ENS Paris-Saclay*, Cachan, France, November 2016.
- S21. **J. Dirrenberger**, N. Auffray, M. Poncelet and G. Rosi. Approche holliste de la chiralité dans les métamatériaux architecturés. **Invited lecture** *Rencontres Franciliennes de Mécanique*, Dammarie-les-Lys, France, June 2016.
- S20. **J. Dirrenberger**. Fabrication additive et grande échelle: le projet DEMOCRITE. **Invited lecture** *ENPC Alumni, Maison des Ponts*, Paris, France, May 2016.

- S19. **J. Dirrenberger**. Architected materials: A short overview. **Invited lecture** *National University of Singapore*, Singapore, April 2016.
- S18. **J. Dirrenberger**. Modelling the plastic behaviour of auxetic materials. **Invited lecture** *Centre National d'Études Spatiales*, Paris, France, March 2016.
- S17. **J. Dirrenberger**. Matériaux, computation et architectures. **Invited lecture** *École Nationale Supérieure d'Architecture Paris-Malaquais*, Paris, France, February 2016.
- S16. **J. Dirrenberger**. Modelling the plastic behaviour of auxetic materials. **Invited lecture** *Unité de Mécanique, ENSTA-ParisTech*, Palaiseau, France, February 2016.
- S15. **J. Dirrenberger**. Towards gigantic RVE sizes for 3D stochastic fibrous networks. **Invited lecture** *Laboratoire de Mathématique Nicolas Oresme, Université de Caen Basse-Normandie*, Caen, France, December 2015.
- S14. A. Bironeau, **J. Dirrenberger**, C. Sollogoub, G. Miquelard-Garnier, S. Roland. Evaluation of morphologically representative sample sizes for nanolayered polymer blends. **Invited lecture** *Centre for Molecular and Macromolecular Studies, Polish Academy of Sciences, Łódź*, Poland, November 2015.
- S13. **J. Dirrenberger**. Matériaux pour la construction durable. **Invited lecture**, *Séminaire du DPEA Architecture post-carbone, Ecole d'Architecture de la Ville et des Territoires*, Marne-la-Vallée, France, October 2015.
- S12. **J. Dirrenberger**. Projet DEMOCRITE : Démonstrateur technologique pour une fabrication additive à grande échelle. **Invited lecture**, *Salon 3D Print*, Lyon, France, September 2015.
- S11. **J. Dirrenberger**. Possibilities offered by 3D printing for the development of architected and metamaterials. **Invited lecture**, *International Workshop on Metamaterials*, Marne-la-Vallée, France, April 2015.
- S10. **J. Dirrenberger**. Computation, robotique et impression 3D en ingénierie des matériaux. **Invited lecture**, *Ecole Supérieure des Beaux-Arts Tours Angers Le Mans*, Le Mans, France, April 2015.
- S9. **J. Dirrenberger**, S. Forest, D. Jeulin. Towards gigantic RVE sizes for 3D stochastic fibrous networks. **Invited lecture**, *Séminaire du laboratoire MSME à l'Université Paris-Est*, Marne-la-Vallée, France, January 2015.
- S8. **J. Dirrenberger**. From Materials Engineering to the Computational Development of Architected Materials. **Invited lecture**, *Hyperbody Media Studies Lectures, TU Delft*, Delft, Netherlands, November 2014.
- S7. **J. Dirrenberger**. Matériaux pour la construction durable. **Invited lecture**, *Séminaire du DPEA Architecture post-carbone, Ecole d'Architecture de la Ville et des Territoires*, Marne-la-Vallée, France, November 2014.
- S6. **J. Dirrenberger**. L'impression 3D, un rendez-vous manqué ? **Invited lecture**, *Séminaire "Société de la connaissance et innovation", Master Affaires Publiques, SciencesPo*, Paris, France, April 2014.
- S5. **J. Dirrenberger**. Introduction to architected materials. **Invited lecture**, *Composite Chair Workshop, AA[n+1]Lab*, Paris, France, March 2014.
- S4. **J. Dirrenberger**. Matériaux et construction durable. **Invited lecture**, *Séminaire du DPEA Architecture post-carbone, Ecole d'Architecture de la Ville et des Territoires*, Marne-la-Vallée, France, November 2013.
- S3. **J. Dirrenberger**. Towards gigantic RVE sizes for 3D stochastic fibrous networks. **Invited lecture**, *Institut Jean Le Rond d'Alembert, Université Pierre et Marie Curie*, Paris, France, May 2013.
- S2. **J. Dirrenberger**. Introduction to architected materials. **Invited lecture**, *RFR Group*, Paris, France, March 2013.
- S1. **J. Dirrenberger**. Introduction to architected materials. **Invited lecture**, *The Bartlett School of Architecture, University College London*, London, UK, February 2013.

## K Other oral communications (26)

- L26. A.-E. Viard\*, **J. Dirrenberger**, and S. Forest. Propagating material instabilities in periodic media. *Workshop on Nonlinear Instabilities and Localization in Materials*, Arpino, Italy, April 2019.
- L25. **J. Dirrenberger**. Towards an integrated approach for the development of architected materials. *Habilitation défense*, Paris, France, December 2018.
- L24. **J. Dirrenberger**, S. Yang\*, E. Monteiro, and N. Ranc. Representative volume element size determination for viscoplastic polycrystalline materials. *DGM workshop on micromechanics*, Wuppertal, Germany, December 2018
- L23. R. Duballet\*, O. Baverel, and **J. Dirrenberger**. Large-scale additive manufacturing and architecture. **Invited lecture** *Rencontres Franciliennes de Mécanique*, Dammarie-les-Lys, France, June 2018.
- L22. **J. Dirrenberger**. XtreeE- the Large-Scale 3D-Printing company. *Ecole Nationale Supérieure d'Architecture de Paris-La Villette*, Paris, France, May 2017.
- L21. **J. Dirrenberger**, S. Forest, D. Jeulin. Towards gigantic RVE sizes for 3D stochastic fibrous networks. *Monash University, Department of Materials Science*, Melbourne, Australia, December 2016.
- L20. **J. Dirrenberger**. Modelling the behaviour of auxetic materials. *National University of Singapore*, Singapore, April 2016.
- L19. **J. Dirrenberger**, G. Miquelard-Garnier, C. Sollogoub, S. Roland, P. Peyre, T. Gu, O. Castelnau, A. Guinault, G. Regnier. From nano- to macroscale applications: multiple processing routes for architected materials. *Architected Biomaterials, Medical and Tissue Engineering Symposium*, Berlin, Germany, December 2014.
- L18. **J. Dirrenberger**. Matériaux architecturés par fabrication additive. *Séminaire de l'institut Carnot ARTS, ENSAM*, Paris, France, May 2014.
- L17. **J. Dirrenberger**. Towards gigantic RVE sizes for 3D stochastic fibrous networks. *Séminaire du laboratoire PIMM à l'École Nationale Supérieure d'Arts et Métiers*, Paris, France, March 2014.
- L16. **J. Dirrenberger**. Towards gigantic RVE sizes for 3D stochastic fibrous networks. *Journées "Problématiques multi-échelles dans les milieux fibreux" du GDR 3MF-Mécanique Multi-échelles des Milieux Fibreux*, Grenoble, France, June 2013.
- L15. **J. Dirrenberger**, S. Forest and D. Jeulin. Effective thermal properties of 3D stochastic fibrous networks. *Workshop on Architected Materials at Collège de France*, Paris, France, February 2013.
- L14. **J. Dirrenberger**, S. Forest and D. Jeulin. RVE size determination for 3D stochastic fibrous networks. *Colloquium at Université Paris-Est*, Marne-la-Vallée, France, January 2013.
- L13. **J. Dirrenberger**, S. Forest and D. Jeulin. Effective Properties of Architected Materials: Periodic Auxetics and Stochastic Networks of Infinite Fibres. *Seminar at Centre des Matériaux, MINES-ParisTech*, Evry, France, June 2012.
- L12. **J. Dirrenberger**, S. Forest and D. Jeulin. Homogenization methods for architected materials. *Roundtable on architected materials, MINES-ParisTech*, Paris, France, May 2012.
- L11. **J. Dirrenberger**. Introduction to architected materials. *Roundtable on architected materials, MINES-ParisTech*, Paris, France, May 2012.
- L10. **J. Dirrenberger**, S. Forest, D. Jeulin, M. Faessel and F. Willot. Etude de la taille du VER pour l'homogénéisation de milieux fibreux poissoniens. *Séminaire du département Mécanique et Matériaux, MINES-ParisTech*, Paris, France, Feb. 2012.
- L9. **J. Dirrenberger**, S. Forest, D. Jeulin, M. Faessel and F. Willot. Effective properties of architected materials. *Séminaire du groupe Comportement et Calcul de Structures, Centre des Matériaux, MINES-ParisTech*, Evry, France, Nov. 2011.

- L8. **J. Dirrenberger**, S. Forest, D. Jeulin, C. Colin, J.-D. Bartout, M. Faessel and F. Willot. Effective properties of architected materials. *ArchiMat 2011, 1st International School on Architected Materials*, Autrans, France, May 2011.
- L7. **J. Dirrenberger**, S. Forest, D. Jeulin, M. Faessel and F. Willot. Modélisation de milieux fibreux aléatoires enchevêtrés et estimation de VER. *Journées thématiques MECAMAT*, Sophia-Antipolis, France, May 2011.
- L6. **J. Dirrenberger**, S. Forest, D. Jeulin, C. Colin, J.-D. Bartout and M. Faessel. Propriétés effectives des matériaux architecturés. *Colloque Mécamat 2011*, Aussois, France, Jan. 2011.
- L5. **J. Dirrenberger** and S. Forest. Homogénéisation numérique de microstructures périodiques avec Zébulon/Z-Set. *Club Zébulon*, Evry, France, Dec. 2010.
- L4. **J. Dirrenberger**, S. Forest and D. Jeulin. Propriétés effectives des matériaux architecturés : cas périodique et cas aléatoire. *École thématique CE2M10 "Changement d'échelles en mécanique des matériaux"*, Briancon, France, Aug. 2010.
- L3. **J. Dirrenberger**, S. Forest, D. Jeulin and C. Colin. Propriétés mécaniques effectives des matériaux architecturés par simulation numérique massive et prototypage rapide. *Journées annuelles de la SF2M*, Paris, France, June 2010.
- L2. **J. Dirrenberger**, S. Forest, F. N'Guyen and D. Jeulin. Modélisation de microstructures aléatoires et notion de volume élémentaire représentatif. *Colloque Mécamat 2010*, Aussois, France, Jan. 2010.
- L1. **J. Dirrenberger**, K. Scrivener, S. Bishnoi and A. Guidoum. Effects of Particle Size Distribution on Mechanical Properties of Cement Paste at Early Age. *Junior EUROMAT 2008*, Lausanne, Switzerland, July 2008.

## L Doctoral courses (2)

- D2. **J. Dirrenberger**. Introduction to computational homogenization for fibrous media. *Models of Generalized Continua characterized by Quasi-Inextensible Fibrous Structures*, **Invited lecture**, Arpino, Italy, Septembre 2016.
- D1. **J. Dirrenberger**, S. Forest, D. Jeulin. Towards gigantic RVE sizes for 3D stochastic fibrous networks. *Models of Generalized Continua characterized by Quasi-Inextensible Fibrous Structures*, **Invited lecture**, Arpino, Italy, Septembre 2016.

## M Technical reports (6)

- T6. **J. Dirrenberger**. Towards an integrated approach for the development of architected materials. Habilitation thesis, *Sorbonne Université*, Paris, France, 2018. <https://hal.sorbonne-universite.fr/tel-02047005v1> (**3 citations**)
- T5. **J. Dirrenberger**. Architected material concepts for launcher-satellite damping connection. *CNES*, Paris, France, 2017.
- T4. **J. Dirrenberger**. Effective properties of architected materials. PhD thesis, *MINES-ParisTech*, Paris, France, 2012. <https://pastel.hal.science/pastel-00797363/fr/> (**25 citations**)
- T3. **J. Dirrenberger** and S. Forest. Simulation et homogénéisation de microstructures périodiques. *Centre des Matériaux, MINES-ParisTech*, Evry, France, 2010.
- T2. **J. Dirrenberger**. Durable Oil-Well Cement for Safe and Reliable CO<sub>2</sub> Storage. MSc thesis, *Université Paris-Sud XI*, Orsay, France, 2009.
- T1. **J. Dirrenberger** and I. Khalfallah. Physico-chemical investigation of the carbonation reaction in oil-well cements for CO<sub>2</sub> storage application. Technical report, *Schlumberger Ltd.*, Clamart, France, 2009.