DIRRENBERGER Justin

Maître de Conférences (Classe normale)
Equipe Pédagogique Nationale 4
Ingénierie Mécanique & Matériaux
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Né le 14/12/1985 à Haguenau (67)
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151, boulevard de l'Hôpital
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Qualifié aux fonctions de PR (CNU 33 et 60)
Titulaire de la PEDR depuis 2017
Titulaire de l'HDR depuis 2018

Expertise

- Mécanique des matériaux, matériaux architecturés, fabrication additive, durabilité des matériaux

Expérience Professionnelle

- Maître de conférences, Conservatoire National des Arts et Métiers, Paris, France (depuis sep. 2013)
- Co-fondateur & conseiller scientifique, XtreeE, Paris, France (depuis sep. 2015)
  Solutions technologiques pour la fabrication additive à grande échelle
- Ingénieur de recherche, Centre des Matériaux, MINES-ParisTech, Evry (déc. 2012 – juin 2013)
  Modélisation multiéchelle de l'effet Payne dans les élastomères chargés
- Ingénieur de recherche, Centre des Matériaux, MINES-ParisTech, Evry, France (oct. 2009 – déc. 2012)
  Homogénéisation numérique des propriétés mécanique et thermiques de matériaux architecturés
- Ingénieur de recherche, Carbon Services, Schlumberger Ltd., Clamart, France (fév. – août 2009)
  Etude de la carbonatation du ciment dans le contexte de la séquestration géologique du CO_2
- Ingénieur de recherche, EPFL, Lausanne, Suisse (mars – août 2008)
  Modésliation de l'effet de la granulométrie sur les propriétés mécaniques dans les pâtes de ciment
- Technicien, Air Liquide Welding, St-Ouen-L'Aumône, France (sep. 2005 – sep. 2006)
  Caractérisation spectroscopique de fumées de soudage à l'arc
- Technicien, SNCF, Agence d'Essai Ferroviaire, Vitry-sur-Seine, France (sep. 2004 – sep. 2005)
  Métrologie et contrôle qualité d'équipements de mesure electromécanique

Formation

- HDR en sciences de l'ingénieur, Sorbonne Université, Paris (2018)
- Doctorat en science et génie des matériaux, MINES-ParisTech, Paris (2012)
- Diplôme d'ingénieur en science et génie des matériaux, Polytech' Paris-Saclay, Orsay (2009)
- M.Sc. en science et génie des matériaux, Université Paris-Sud, Orsay (2009)
- DUT en mesures physiques, Université Paris-Sud, Orsay (2006)

Distinctions

- FEMS (Federation of European Materials Societies) Communication Award for Excellence in Materials Science & Engineering, 1st runner-up (juil. 2018)
- Prime d'encadrement doctoral et de recherche (PEDR) (oct. 2017)
- Médaille Jean Rist de la SF2M (Société Française de Métallurgie et de Matériaux) (oct. 2017)
- Bourse PHC FASIC (French-Australia Science and Innovation Collaboration) (déc. 2016)
- Financement ANR Jeune Chercheur (2016 – 2021)
- Bourse de recherche de l'EPFL, Lausanne, Suisse (mars – août 2008)

Financement de projets

- Financement ANR :
  - JCJC SCOLASTIC (2016-2021)
  - MAX-OASIS (2020-2024) avec UGE (MSME), ENS Paris-Saclay (LMT) et Sorbonne Université (IJLRDA)
  - ALMARIS (2016-2020) avec Onera (DMAS), UTT (LASMIS), Armines (CDM) et PolyShape
- Financement CNRS :
  - PEPS INSIS (2019) avec Université Grenoble Alpes (SiMaP) et Chimie Paris (IRCP)
  - F2M-CNRS APHORISME (2014-2015) avec UPEM (MSME) et ENS-Cachan (LMT)
- Autres sources de financement :
  - CNES Avant-projet (2017, 2020)
  - CNES Contrat R&T (2018-2019)
  - ENPC Contrat de recherche (2015-2018)
  - HESAM Université Bourse Synergie, projet DEMOCRITE (2014-2015)

Production Scientifique

- 23 articles dans des journaux internationaux à comité de lecture
- 9 articles dans des conférences internationales à comité de lecture
- 11 chapitres d'ouvrages
- 1 brevet
- 40+ présentations invitées parmi 100+ communications orales, séminaires, workshops, etc.

Mobilité internationale

- Séjour de 2 semaines à Monash University, RMIT University et Australian National University en Australie en décembre 2017, invité par le Department of Defence australien et l'Ambassade de France en Australie pour représenter la France et le CNRS (INSIS) au EDTAS Symposium on Advanced Materials and Manufacturing
- Séjour de 3 semaines à Monash University (Clayton, Australie) en novembre et décembre 2016, invité par Dr. A. Molotnikov grâce à une bourse de mobilité PHC FASIC
- Séjour d'1 semaine à National University of Singapore en avril 2016, invité par Dr. L. H. Poh
- Séjour d'1 semaine au Centre of Molecular and Macromolecular Studies de l'Académie des Sciences Polonaise à Łódź, Pologne en décembre 2015, invité par Prof. A. Gałęski

Responsabilités académiques

- Responsable du diplôme d'ingénieur en matériaux du Cnam, FISA Paris (depuis 2017)
- Direction de 9 thèses de doctorat (6 en cours **dont 2 à soutenir en 2020**), 3 post-docs et 8 stages de fin d'études
- Rapporteur pour 4 thèses, examinateur dans 9 jurys de thèse
- Participation à 5 comités de sélection pour MCF (CNU 28, 33 et 60)
- Rapporteur pour différents organes de financement nationaux et internationaux, pour divers journaux
- Membre élu au conseil des formations du Cnam (depuis 2018)
- Membre élu au conseil de laboratoire du PIMM (2015-2017)

Réseaux scientifiques

- Membre élu du conseil d'administration de l'association Mécamat (depuis 2016)
- Membre nommé de la commission formation de la SF2M (depuis 2017)
- Adhérent aux associations Mécamat (2010-), Euromech (2010-), SF2M (2011-), AFM (2018-), AMAC (2020-)
- Participation aux GDR Mécafib, MéPhy et MeGe

Organisation d'événements scientifiques

- Organisateur du colloque national de mécanique des matériaux en 2022 à Aussois, France
- Responsable du séminaire du laboratoire PIMM (depuis 2018)
- Membre du comité scientifique de la conférence nationale Matériaux à Strasbourg, France, déc. 2018
- Organisateur d'un workshop international de 2 jours sur les matériaux architecturés à Paris, mai 2012
- Membre de l'équipe organisatrice pour la conférence ICMM2 à Paris, sep. 2011

Activités de vulgarisation

- Participation au podcast mathématique *Trajectoires* #8 sur l'utilisation de l'IA pour la conception
- Conférence invitée à propos de l'IA en science des matériaux dans le cadre de Pint of Science Paris 2019.

Scientific output

Justin DIRRENBERGER, Maître de conférences HDR, Cnam

January 19, 2021

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 (23)

A23. M.V. Vellayappan, E. Onal, C. Sollogoub, **J. Dirrenberger**, A. Guinault, A. Molotnikov, and N. Cameron. Architectured multilayered polymer composite biomaterials produced by co-extrusion and additive manufacturing. *(under review)*

A22. I. Muñoz, J. Alonso-Madrid, M. Menéndez-Muñiz, M. Uhart, J. Canou, C. Martin, M. Fabritius, L. Calvo, L. Poudelet, 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` (**0 citation**)

A21. A.-E. Viard*, **J. Dirrenberger**, and S. Forest. Propagating material instabilities in planar architectured 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` (**0 citation**)

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` (**3 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` (**64 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 dependsmainly on their microstructure: experimental evidence andqualitative 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` (**25 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` (**18 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` (**7 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` (**4 citations**)

A14. R. Duballet*, O. Baverel, and **J. Dirrenberger**. Space truss masonry walls with robotic mortar extrusion. *Structures* (**IF=1.65**), volume **18**, 2019, pp.41-47 http://doi.org/10.1016/j.istruc.2018.11.003 (**12 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 (**2 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 (**0 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 (**323 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 (**112 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 (**26 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 (**70 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 (**25 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 (**20 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 (**436 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 (**84 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 (**82 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 (**97 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 (**76 citations**)

B Refereed conference proceedings (9)

R9. 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

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 Architectured 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

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 (**6 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 (**58 citations**)

C Scholarly book chapters (11)

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 (**3 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 (**0 citation**)

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 (**3 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

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 (**3 citations**)

B6. **J. Dirrenberger**, S. Forest and D. Jeulin. Computational homogenization of architectured materials. In *Architectured 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 (**3 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 (**5 citations**)

B4. **J. Dirrenberger**. From Architectured 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

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 (**12 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 (**4 citations**)

B1. B. Lecampion, J. Vanzo, F.J. Ulm, B. Huet, C. Germay, I. Khalfallah and **J. Dirrenberger**. Evolution of Portland cement mechanical properties exposed to CO2-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/ (**7 citations**)

D Patent (1)

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/

E Invited lectures in international refereed conferences (5)

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 architectured 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 architectured 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 Architectured Materials. *What's the Matter- Materiality and Materialism at the Age of Computation*, **Invited keynote lecture**, Barcelona, Spain, September 2014.

F 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 architectured 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.

G International refereed conference lectures (27)

C27. A.-E. Viard*, **J. Dirrenberger**, and S. Forest. Propagating material instabilities in periodic media. *29th International Workshop on Computational Mechanics of Materials (IWCMM29)*, Dubrovnik, Croatia, September 2019.

C26. F. Ongaro*, K. Mathis, F. Masson, and **J. Dirrenberger**. Architectured 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. Architectured 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. Architectured hybrid auxetic lattice structures. *IUTAM Symposium on Architectured 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 architectured 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.

H National refereed conference lectures (3)

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.

I Invited lectures (34)

S34. A.-E. Viard, **J. Dirrenberger**, S. Forest. Controling the propagation of plastic instabilities in planar architectured materials. **Invited lecture**, *WCPM, University of Warwick*, Warwick, UK, November 2020.

S33. A.-E. Viard, **J. Dirrenberger**, S. Forest. Controling the propagation of plastic instabilities in planar architectured materials. **Invited lecture**, *MSSMat, CentraleSupélec*, Gif-sur-Yvette, France, June 2020.

S32. A.-E. Viard, **J. Dirrenberger**, S. Forest. Controling the propagation of plastic instabilities in planar architectured 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 architecture 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 Mécamat 2018*, Aussois, France, January 2018.

S27. **J. Dirrenberger**. From architectured materials to the development of large-scale additive manufacturing. **Invited lecture** *UPEM*, Marne-la-Vallée, France, December 2017.

S26. **J. Dirrenberger**. Hybrid architectured 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 architectured 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 architectured lattice structures. *Réseau National de Connaissances*, **Invited lecture**, Angers, France, June 2017.

S23. **J. Dirrenberger**. From architectured materials to the development of large-scale additive manufacturing. **Invited lecture** *TU Delft*, Delft, The Netherlands, November 2016.

S22. **J. Dirrenberger**. From architectured 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**. Architectured 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 architectured 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 Architectured 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 architectured 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 architectured materials. **Invited lecture**, *RFR Group*, Paris, France, March 2013.

S1. **J. Dirrenberger**. Introduction to architectured materials. **Invited lecture**, *The Bartlett School of Architecture, University College London*, London, UK, February 2013.

J 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 architectured materials. *Habilitation defense*, 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 architectured materials. *Architectured 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 Architectured 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 Architectured 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 architectured materials. *Roundtable on architectured materials, MINES-ParisTech*, Paris, France, May 2012.

L11. **J. Dirrenberger**. Introduction to architectured materials. *Roundtable on architectured 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 architectured 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 architectured materials. *ArchiMat 2011, 1st International School on Architectured 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"*, Briançon, 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.

K 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.

L Technical reports (6)

T6. **J. Dirrenberger**. Towards an integrated approach for the development of architectured materials. Habilitation thesis, *Sorbonne Université*, Paris, France, 2018. `https://hal.sorbonne-universite.fr/tel-02047005v1`

T5. **J. Dirrenberger**. Architectured material concepts for launcher-satellite damping connection. *CNES*, Paris, France, 2017.

T4. **J. Dirrenberger**. Effective properties of architectured materials. PhD thesis, *MINES-ParisTech*, Paris, France, 2012. `http://pastel.archives-ouvertes.fr/pastel-00797363/fr/`

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_2 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_2 storage application. Technical report, *Schlumberger Ltd.*, Clamart, France, 2009.