

Benoit Coasne

(CNRS Research Director, Section 15)



Benoit COASNE^{1,2} (Male, 48 ans, 2 children, benoit.coasne@univ-grenoble-alpes.fr)

CNRS Research Director 2nd classe (section 15, CNRS)

¹ Lab. Interdisciplinaire de Physique, CNRS/Univ. Grenoble Alpes, Grenoble, France

² ILL Theory Group, Institute Laue Langevin (Neutron Source), Grenoble, France

Researcher id: <http://scholar.google.com/citations?user=-rO1SkUAAAAJ&hl=en&oi=ao>

Site Web: benoitcoasne.github.io

Research Theme: « Adsorption and Transport in Nanoporous Materials »

Academic Records and Education

2015/... **CNRS Reseach Director** (1st Class since 10/2022)

Lab. Interdisciplinaire de Physique, CNRS/Univ. Grenoble Alpes, France.

2023/... **Adjunct Professor** (University of Maryland UMD)

Dept. Chemistry/Biochemistry, College Park, MD, USA

2023/... **Leader Soft Matter** (ILL Permanent Affiliate)

ILL Theory Group, Institute Laue Langevin, Grenoble, France

2012/15 **CNRS Research 1st class + MIT Visiting Associate Prof.**

CNRS/MIT Lab, USA. **Group leader « Multiscale adsorption/transport »**

2011 **Habilitation** à diriger des recherches, *Thermodynamics/ dynamics of fluids, electrolytes and solides in porous materials*. Univ Montpellier

2005/12 **CNRS Researcher** (1st class since 01/2009)

Institut Charles Gerhardt, Montpellier, France

2003/04 **Postdoctoral Researcher**, Department of Chemical Engineering,

North Carolina State University, Raleigh, NC, USA

2003 **PhD Physics**, *Adsorption and condensation of fluids in porous silicon*

Groupe de Physique des Solides, Univ Paris 7, France

Science/International Recognition

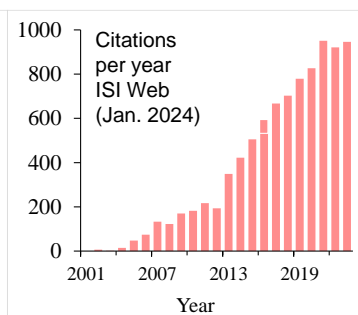
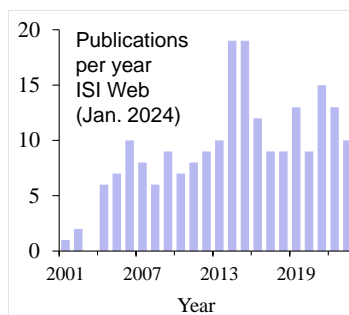
214 Articles (3 Nature Mat, 6 Nat Comm, 2 Chem Soc Rev, 2 PNAS, 2 JACS, 4 PRL., 3 J Phys Chem Lett)

51 H-index (**57** Google Scholar)

8853 Citations

53 Invited Conferences

82 Seminaires, Schools, etc.



Awards and Distinctions

2023/24 **Adjunct Professor**, Univ. Maryland, College Park, MD, USA

2023/27 **Prime RIPEC C3**, CNRS et MENESR

2019 **Invited Professor**, Chair Saint-Gobain, Institut Navier, France

2016/22 **Board of Directors**, International Adsorption Society

2015/19 **Prime d'encadrement doctoral et de recherche**, CNRS et MENESR

2012/15 **Visiting Associate Professor**, MIT, Cambridge, USA

2011/17 **Cofounder** of the French Adsorption Society

2010/14 **Prime d'Excellence Scientifique**, CNRS et MENESR

2013 **Scientific Collaborator**, Faculté Polytechnique de Mons, Belgium

2011 **Award "Chercheur d'Avenir 2011"** in Languedoc Roussillon, France

2006 **Visiting Scholar**, Adam Mickiewicz University, Poznan, Poland

RESPONSIBILITIES, MANAGEMENT AND SCIENTIFIC ANIMATION

Responsibilities, Collective Tasks

2022/...	Steering Committee , New Joint Laboratory CNRS - PetroChina
2022/...	ILL Review Panel , Institut Laue Langevin (Neutron Center), Grenoble
2022/...	Committee “Young Researcher Award” , Int. Adsorption Society
2022/...	Board Member Division Chimie Physique , Société Chimique de France
2022/24	Scientific Council Expert , IFP Energies Nouvelles
2022/...	French Chair , French/German Adsorption Initiative (www.adsorption.eu)
2019/...	Principal Science Advisor , VEOLIA Design Center, St Maurice, France
2019/22	Panel Chair IAS Carbon neutrality , International Adsorption Society
2016/...	Nominated Member LIPhy Council , CNRS/University Grenoble Alpes
2011/17	President of the French Adsorption Society (elected and then reelected)
2012/15	Group Leader « Multiscale Adsorption and Transport » CNRS/MIT Lab., Boston, USA
2015/20	Member Poromechanics Committee , Am. Soc. Civil Engineers
2011/14	Member Institute Charles Gerhardt Council , CNRS/Univ. Montpellier
2009/12	Head of the Communication Commission of Institute Charles Gerhardt
2009/12	Member Scientific Animation of the Institute Charles Gerhardt
2010/16	Board member, French Zeolite Society
2009/12	Board member, Local section LR of the French Chemical Society SCF

Commission of Trust

2019/20	M-ERA.NET strategy expert group (21 pers.) Roadmapping 2020 call
2020	Science Council Expert , IFP Energies Nouvelles
2018	Guest Editor , Issue “Adsorption” in Curr. Op. Chem. Eng. (Elsevier)
2017/18	Panel ANR , French National Science Agency « Matériaux inorganiques »
2015/21	Panel FWO , Flanders Res. Foundation « Chem Eng & Material Sci. »
2014	Review Editor in the Editorial Board of Frontiers Energy Research - Open Access Journal, partner of Nature Publishing Group (NPG)
2014	Co-Guest Editor, « Design/modeling porous materials », Eur Phys J
Since 2009	External expert in Sections 31 et 33 of CNU

Organization of scientific meetings

2026	Chair “Matériaux 2026”, Grenoble, France (~1500 personnes)
2023	Conference co-chair “FRA/GER Adsorption meeting”, Strasbourg, France
2018	Colloquium Chair “Matériaux poreux, granulaires, à grande surface spécifique”, Conference Matériaux 2018, Strasbourg, France (~ 100 people)
2018	Symp. Chair “Soft Porous Materials”, Interpore2018, N. Orleans, USA
2010/17	Journées Annuelles Association Française de l’Adsorption (~ 70 people)
2011/16	Journées Annuelles Groupe Français des Zéolithes (~ 80 people)
2013	Ionic Liquids for Materials (~ 100 people) ILMAT2013, Montpellier
2010	Journées SCF Grand Sud Ouest (~80 people), Montpellier

Student and postdoc supervision (18 PhD, 21 postdocs, 15 undergrad)

• **19 PhD Students** 1. J. Dweik, 2. C. Abrioux, 3. P. Bonnaud, 4. F. Villemot, 5. M. Lepinay (ST Micro), 6. P. Billemont (UMons, Belgique), 7. L. Deliere (CEA), 8. H. Getachew, 9. D. Jin, 10. R. Bey, 11. I. C. M. Costa (IFPEN), 12. M. Chen (ETH medal award, Switzerland), 13. Z. Zaafour (IFPEN), 14. S. Cohen (U. Maryland, Chateaubriand Fellow), 15. W. Kelouai, 16. N. Ferreira de Souza, 17. L. Didier, 18. N. Ben Amor (IFPEN), 19. P. Grisanti • **22 Postdocs** 1. P. Cazade, 2. G. Ori, 3. L. Ngoc Ho, 4. R. Hartkamp, 5. A. Botan, 6. G. Hantal, 7. K. Falk, 8. C. Bousige, 9. P. Billemont, 10. T. Lee, 11. A. Obliger, 12. G. Couchaux, 13. D. Mehlhorn, 14. A. Schlaich, 15. R. Manokaran, 16. A. Sam, 17. V. Prasad, 18. S. Gravelle, 19. T. Ammouli, 20. V. Kumar, 21. C. Herrero, 22. S. Dasgupta • **15 Undergrad.** 1. L. Naamar, 2. G. Pallares, 3. D. Horlait, 4. P. Epicoco, 5. I. Aydogdu, 6. J. Nigon, 7. F. Freitag, 8. L. Atmani, 9. H. Meyer, 10. J. Mohan, 11. D. Tabacchioni, 12. Z. Zaafour, 13. M. Barbagero, 14. K. Olson, 15. P. Sanchez-Moreno Royer

PhD and Habilitation Jurys (56 including R = Reviewer, P = President)

56. **HDR R. Vermorel** (R, Grenoble), 55. **J. Martin-Dalmas** (P, Grenoble), 54. **J. Joliat** (R, Besançon), 53. **G. Santos Paulo** (R, Italy), 52. **S. Franiatte** (R, Toulouse), 51. **V. Girelli** (Strasbourg), 50. **T. Outerelo Corvo** (P, Saclay), 49. **R. Fayad** (R, Lyon), 48. **P. Carta** (R, Italy), 47. **Y. Khaldouni** (R, Pau), 46. **K. Wang** (P, Montpellier), 45. **HDR R. Semino** (R, Paris), 44. **F. Rizk** (R, Lyon), 44. **K. Ariskina** (R, Pau), 42. **A. Hammoumi** (R, Cavaillon), 41. **M. Ducamp** (R, Cavaillon), 40. **M. Benchaabane** (R, Paris), 40. **A. Robert** (Paris), 39. **M. Ducamp** (R, Paris), 38. **A. Marcotte** (P, ENS Paris), 37. **A. Mishra** (R, Univ. Metz), 36. **F. Guy** (P, Chambéry), 35. **C. Methais** (R, Besançon), 34. **M. Sperra** (R, SP, Brazil), 34. **G. El Tabbal** (R, Paris), 32. **T. Virdis** (R, VUB Brussels), 31. **J. B. Pigot** (R, Paris), 30. **A. Patt** (R, Dijon), 29. **A. Hafreager** (R, Oslo), 28. **R. Bingre** (P, Strasbourg), 27. **K. L. Nguyen** (R, Marseille), 26. **A. Coste** (Montpellier), 25. **N. Ganfoud** (R, Paris), 24. **C. Cabaud** (P, Paris), 23. **M. Chen** (R, ETH Zurich), 22. **HDR M. Vandamme** (R, Paris), 21. **B. K. Xiong** (Tours), 20. **E. Perrin** (R + P, Berlin + Paris), 19. **J. Wolanin** (R, Paris), 18. **HDR J. Jacquemin** (R, Tours), 17. **P. Bacle** (R, Paris), 16. **W. Louisfremea** (R, Paris), 15. **W. Goncalves** (R, Lyon), 14. **S. Dutta** (R, Rennes), 13. **J. M. Vanson** (R, Paris), 12. **M. Ciantar** (R, Paris), 11. **C. Péan** (R, Paris), 10. **C. Sempere** (R, Lyon), 9. **M. Michelin-Jamois** (R, Lyon), 8. **B. Farbos** (R, Bordeaux), 7. **G. Aubry** (R, Grenoble), 6. **A. Bouzid** (Strasbourg), 5. **M. De Toni** (R, Paris), 4. **L. Brochard** (R, Paris), 3. **M. Amrouche** (R, Manchester), 2. **A. Botan** (R, Paris), 1. **M. Jeffroy** (Orsay)

VALORISATION, TECHNOLOGICAL TRANSFER, INDUSTRIAL RELATIONS

Contracts and Research Grants (* = total funding unknown)

Contrat	Période	Organisme	Partners	Montant	Responsabilité
HTD-POM	2024/28	ANR/PRCI	2	~300 k€	Coordinator
COCLICO	2023/27	ANR	2	~100 k€	Partner
CHIRALCELL	2023/27	ANR	4	~50 k€	Partner
SESAME	2022/26	ANR	4	~50 k€	Partner
ACOUFEN	2021/25	ANR	3	~500 k€	Coordinator
MENIHR	2021/25	ANR	3	106 k€	Partner
IRGA21	2021/23	Univ. Grenoble Alpes	3	43 k€	Co-Coordinator
MODYTICS	2019/23	ANR Astrid	4	130 k€	Partner
CATCALL	2019/23	ANR	2	130 k€	Partner
2FDN	2019/23	PhD grant	2	103 k€	Coordin.
IFPEN	2017/20	Research contract	1	30 k€	Coordin.
TWIST	2017/20	ANR	5	80 k€	Partner
CEA	2017/20	Research contract	3	40 k€	Partner
EUROKIN4	2017/18	Research contract	1	12.5 k€	Coordin.
IFPEN	2016/19	Research contract	1	18 k€	Coordin.
TOTAL	2017/18	Research contract	3	7 k€	Partner
TAMTAM	2011/15	ANR	4	~500 k€	Coordin.
X-Shale	2012/15	Industry	3	~1 M€/year	Co-coordin.
OCTAPPOM	2014	NEEDS	2	~100 k€	Coordin.
GENESIS	2013/16	ANR	3	~400 k€	Partner
TARG-E-D	2013/16	ANR	3	~376 k€	Partner
Transport_ion	2012/15	Cherch. Avenir	2	~70 k€	Coordin.
NanoChalco	2011/15	ANR	3	~500 k€	Coordin.
Structuring_IL	2012/15	CINES	1	CPU Time	Coordin.
IDDILIQ	2009/12	ANR	1	200 k€	Partner
ATILH	2008/10	Industry	5	100 k€*	Partner
SiMoNanoMem	2008/10	ANR	4	400 k€	Partner
Eau, Electro	2009/10	CINES	1	CPU Time	Coordin.

Partnership with industry/Consulting

- 2009/20 **Saint Gobain**, Consulting « Adsorption/transport in porous materials »
- 2019/20 **EUROKIN consortium**, 200 page report on transport in porous media
- 2012/15 **Shell** and **Schlumberger**, « Adsorption, Transport, Mechanics properties of Gas Shale ». Collab. Industry/Academia
- 2015/17 **Gaztransport & Technigaz** (GTT) Report on Adsorption (2015) + Report on Knudsen diffusion (2017) + Technical calculations (2017)
- 2008/2010 **Association Technique de l'Industrie des Liants Hydrauliques (ATILH)**, « Porosity, transport and resistance of concrete ». (2008-2010)

FORMATION, TEACHING, DISSEMINATION

Teaching, Training

- 2022/... **International Master Week**, Qingdao University/China, Adsorption and transport in porous materials **(8 h/year)**
- 2016/... **Research Training Master Nanosciences**, University Grenoble Alpes, Molecular modeling **(40 h/year)**
- 2018/... **Res. Seminar for Master 2 Nanophysics**, U. Grenoble Alpes **(1 h/year)**
- 2018 **Collège École Polytechnique X**, Multiscale porous materials **(4h)**
- 2014 **Formation Arkema**, Characterization techniques of porous solids **(8h)**
- 2013 **Formation ST Microelectronics**, Molecular simulation **(16h)**
- 2012 **Collège École Polytechnique X**, Multiscale porous materials **(4h)**
- 2012 **Formation IRCELYON**, Molecular simulation **(16h)**
- 2011 **Course**, Institute of Separative Chemistry, Molecular modeling **(2h)**
- 2009 **Tutorat** Bénévole auprès d'élèves en primaire/collège/lycée, Association de quartier Boutonnet, Montpellier **(2 h/week)**
- 2005/11 **Master** Phys/Chem, U. Montpellier, Molecular modeling **(8 h/year)**
- 2000/02 **IUT**, Univ. Paris 7, Classical Mechanics **(115h)**
- 2000/01 **DEUG**, Univ. Marne la Vallée, Electromagnetism **(45h)**
- 1999/00 **DEUG**, Univ. Paris 7, Electronics **(70h)**

Communication/Dissemination

- 2020 **Les matériaux nanoporeux: de l'utilité des trous en chimie des matériaux**, **Chimie Étonnante CNRS** (Farrusseng, Coasne)
- 2020 **Des matériaux fonctionnels à l'échelle du nanomètre**, **Usine Nouvelle 1035**, Oct. 2020 (Farrusseng, Coasne)
- 2016 Article P. Passebon in **Industrie & Technologies**, <https://www.industrie-techno.com/comprendre-les-gaz-de-schiste-pour-mieux-les-exploiter.42366>
- 2012 **L'eau dans les mésopores du ciment**, **Ciments, Bétons, Plâtres et Chaux 907**, 64, 2012. (Bonnaud, Pellenq, Coasne)
- 2010 Internship **L'Express.fr**. 2 articles « Nous comprenons les consommateurs d'eau en bouteilles » et « Le triplement du nucléaire doit être débattu »
- 2010 Seminar for University Students on Research in France
- 2008 Seminar for High School Students on Research in France

SCIENTIFIC PRODUCTION

1. Publications in peer-reviewed journals (195)
including 6 invited review articles (titles in red)
Communication releases are indicated in green

Submitted

- P200.** N. Ferreira de Souza, L. Fernando Mercier Franco, C. Picard, **B. Coasne**, Thermal Conductivity of a Fluid-Filled Nanoporous Material: Underlying Molecular Mechanisms and the *Rattle* Effect, Submitted (2024).
- P199.** L. Hua, A. Shomali, C. Zhang, **B. Coasne**, D. Derome, J. Carmeliet, Anisotropic deformation in a polymer slab subjected to fluid adsorption, Submitted (2024).
- P198.** A. Shomali, C. Zhang, W. Liu, **B. Coasne**, E. J. Schofield, D. Derome, J. Carmeliet, Molecular mechanisms involved in the treatment of waterlogged archaeological wood with polyethylene glycol: a hybrid Monte Carlo/molecular dynamics study, Submitted (2024).
- P197.** S. Dutta, A. Nossov, A. Galarneau, Y. Didi, B. Said, R. Denoyel, V. Wernert, **B. Coasne**, F. Guenneau, Apparent Anomalous Temperature Dependence of Self-diffusion Studied by Pulsed-Field Gradient Nuclear Magnetic Resonance and Thermodynamic Modeling, Submitted (2023).
- P196.** A. Streb, R. Lively, P. Llewellyn, A. Matsumoto, M. Mazzotti, R. Pini, **B. Coasne**, Towards carbon neutral scientific societies: A case study with the International Adsorption Society, Submitted (2023).

2024

- P195.** I. C. Medeiros-Costa, L. Catita, D. Wisser, A. Lesage, V. Lefebvre, A. S. Gay, V. Rouchon, C. Laroche, J. Perez-Pellitero, **B. Coasne**, Connectivity Assessment in Hierarchical Zeolites by Correlating Nuclear Magnetic Resonance, Electron Tomography and Adsorption Scanning, *Materials Chemistry and Physics*, in press (2023).
- P194.** W. Kellouai, J. L. Barrat, P. Judeinstein, M. Plazenet, **B. Coasne**, On De Gennes Narrowing of Fluids Confined at the Molecular Scale in Nanoporous Materials, *J. Chem. Phys.* **160**, 024113 (2024).
- P193.** D. Jin, N. Wu, J. Zhong, **B. Coasne**, Phase stability and nucleation kinetics of salts in confinement, *J. Mol. Liq.* **394**, 123698 (2024).

P192. C. Hadj, B. Dollet, **B. Coasne**, E. Lorenceau, [Soap Film Membranes for CO₂/Air Separation](#), *Langmuir* **40**, 1327 (2024).

2023

P191. V. P. Kurupath, **B. Coasne**, [Mixture Adsorption in Hierarchical Nanoporous Zeolites: In-pore and Surface Selectivity](#), *J. Phys. Chem. B* **127**, 9596 (2023).

P190. L. Hua, C. Zhang, A. Shomali, **B. Coasne**, D. Derome, J. Carmeliet, [Sorption-deformation interplay in hierarchical porous polymeric structure composed of slit-pore in amorphous matrix](#), *Langmuir* **39**, 11345 (2023).

P189. M. Rescigno, M. Lucoli, F. G. Alabarse, U. Ranieri, B. Frick, **B. Coasne**, L. E. Bove, [Low Temperature Dynamics of Water Confined in Hydrophilic Zeolite Nanopores](#), *J. Phys. Chem. B* **127**, 20 (2023).

P188. A. Sam, M. Barbagero, R. Venegas, **B. Coasne**, [Multiscale Acoustic Properties of Nanoporous Materials: From Microscopic Dynamics to Mechanics and Wave Propagation](#), *J. Phys. Chem. C* **127**, 15 (2023).

P187. C. Zhang, **B. Coasne**, D. Derome, J. Carmeliet, [Adsorption/percolation model for water diffusion in deformable nanoporous polymers](#), *ACS Nano* **17**, 4507 (2023).

P186. A. J. Souna, S. R. Cohen, C. A. Rivera, K. Manfred, **B. Coasne**, J. T. Fourkas, [The Role of Resonant Coupling in Vibrational Sum-Frequency-Generation Spectroscopy: Liquid Acetonitrile at the Silica Interface](#), *J. Mol. Liq.* **375**, 121315 (2023)

P185. S. Dutta, A. Galarneau, D. Minoux, C. Aquino, J. P. Dath, F. Guenneau, **B. Coasne**, [Molecular Diffusion in Hierarchical Zeolites with Ordered Mesoporosity: Pulsed Field Gradient Nuclear Magnetic Resonance combined with Thermodynamic Modeling](#), *J. Phys. Chem. C* **127**, 1548 (2023).

P184. A. Obliger, C. Bousige, J. M. Leyssale, **B. Coasne**, [Mini-review on the development of atomistic kerogen models and their applications in gas adsorption and diffusion \(Invited Review Paper\)](#), *Energy Fuels* **37**, 1678 (2023).

+ ACS Editor's Choice, <https://pubs.acs.org/page/policy/editorchoice/index.html>

2022

P183. V. Wernert, **B. Coasne**, P. Levitz, K. Nguyen, E. J. Garcia, R. Denoyel, [Tortuosity of hierarchical porous materials: diffusion experiments and random walk simulations](#), *Chem. Eng. Sci.* **264**, 118136 (2022).

P182. D. Bauer, Z. Zaafour, G. Batot, **B. Coasne**, From Transient to Stationary Transport in Porous Networks under Various Adsorption Conditions and Kinetics, *J. Phys. Chem. B* **126**, 6125 (2022).

P181. C. O’Sullivan, C. Arson, **B. Coasne**, A Perspective on Darcy’s Law across the Scales: From Physical Foundations to Particulate Mechanics, *J. Eng. Mech.* **148**, 11 (2022).

+ Editor’s Choice section of the *Journal of Engineering Mechanics* page in the ASCE Library <https://ascelibrary.org/journal/jenmdt>

P180. I. C. Medeiros-Costa, C. Laroche, **B. Coasne**, J. Pérez-Pellitero, Xylene Selectivity at the External Surface of Hierarchical Zeolites: Experiment and Molecular Modeling, *Ind. Eng. Chem. Res.* **61**, 10184 (2022).

P179. C. Pagis, D. Laprune, Lucian Roiban, T. Epicier, C. Daniel, D. Farrusseng, **B. Coasne**, Morphology and topology assessment in hierarchical zeolite materials: adsorption hysteresis, scanning behavior, and domain theory, *Inorg. Chem. Frontiers* **9**, 2903 (2022).

P178. W. Kellouai, P. Judenstein, M. Plazanet, S. Baudoin, M. Drobek, A. Julbe, **B. Coasne**, Gas Adsorption in Zeolite and Thin Zeolite Layers: Molecular Simulation, Experiment and Adsorption Potential Theory, *Langmuir* **38**, 5428 (2022).

P177. S. Ghosavand, **Benoit Coasne**, R. Guillet-Nicolas, P. Bazin, M. Desmurs, L. J. Aguilera, V. Ruaux, S. Mintova, The role of alkali metal cations on the CO₂ adsorption behavior of nanosized chabazite, *ACS Appl. Nano. Mater.* **5**, 5578 (2022).

P176. J. W. M. Osterrieth et al., How reproducible are surface areas calculated from the BET equation?, *Adv. Materials*, 2201502 (2022).

P175. D. T. Bowron, D. A. Keen, M. Kint, C. Weigel, L. Konczewicz, S. Contreras, **B. Coasne**, G. Garbarino, M. Beaudhuin, J. Haines, J. Rouquette, Atomic-Spring Effect in Amorphous Silica-Helium Composite, *J. Phys. Chem. C* **126**, 5722 (2022).

P174. Z. Zaafour, G. Batot, C. Nieto-Draghi, B. Rotenberg, **B. Coasne**, D. Bauer, Impact of adsorption kinetics on pollutant dispersion in water flowing in nanopores, *Adv. Water Res.* **162**, 104143 (2022).

P173. V. Wernert, K. L. Nguyen, P. Levitz, **B. Coasne**, R. Denoyel, Impact of surface diffusion on transport through porous materials, *J. Chrom. A* **1665**, 462823 (2022).

P172. M. Dopke, F. Westerbaan van der Meij, **B. Coasne**, R. Hartkamp, Surface Protolysis and its Kinetics Impact the Electrical Double Layer, *Phys. Rev. Lett.* **128**, 056001 (2022).

P171. S. R. Cohen, M. Plazanet, S. Rols, D. J. Voneshen, J. T. Fourkas, **B. Coasne**, Structure and Dynamics of Acetonitrile: Molecular Simulation and Neutron Scattering, *J. Mol. Liq.* **348**, 118423 (2022).

P170. C. Zhang, M. Chen, **B. Coasne**, S. Keten, D. Derome, J. Carmeliet, Hygromechanics of Composite with Intramolecular Interactions at Fiber-Matrix Interface Investigated with Molecular Dynamics, *Composites Part B* **228**, 109449 (2022).

P169. A. Schlaich, D. Jin, L. Bocquet, **B. Coasne**, Electronic screening using a virtual Thomas–Fermi fluid for predicting wetting and phase transitions of ionic liquids at metal surfaces, *Nature Materials* **21**, 237 (2022).

+ CNRS communication: <https://www.inp.cnrs.fr/index.php/fr/cnrsinfo/un-fluide-virtuel-pour-simuler-des-liquides-charges-confines>

2001 – 2021

P168. M. Lions, C. Daniel, B. Coasne, F. Meunier, A. Tuel, D. Farrusseng, The Pivotal Role of Critical Hydroxyl Concentration in Si-rich zeolites for Switching Vapor Adsorption, *J. Phys. Chem. C* **125**, 22890 (2021).

P167. J. Wolanin, L. Michel, D. Tabacchioni, J. M. Zanolli, J. Peters, I. Imaz, **B. Coasne**, M. Plazanet, C. Picard, Heterogeneous Microscopic Dynamics of Water Nanoconfined in a Ultra-hydrophobic Environment: Neutron Scattering and Molecular Modeling, *J. Phys. Chem. B* **125**, 136 (2021).

P166. M. Santoro, M. Morana, D. Scelta, J. Rouquette, K. Dziubek, F. A. Gorelli, R. Bini, G. Garbarino, A. van der Lee, F. Di Renzo, B. Coasne, J. Haines, Insertion of Oxygen and Nitrogen in the Siliceous Zeolite TON at High-Pressure, *J. Phys. Chem. C* **125**, 19517 (2021).

P165. C. Zhang, M. Chen, S. Keten, **B. Coasne**, D. Derome, J. Carmeliet, Hygromechanical mechanisms of wood cell wall revealed by molecular modeling and mixture rule analysis: Role of components, interphases and hydrogen bonding, *Sci. Adv.* **7**, eab8919 (2021).

P164. T. Rego, S. Spagnoli, M. C. Fauré, C. Allain, **B. Coasne**, J. Malinge, C. Shen, P. Fontaine, M. Goldmann, Unexpected order-disorder transition in Diacetylene alcohol Langmuir film, *Langmuir* **37**, 30 (2021).

P163. Z. Zaafouri, G. Batot, C. Nieto-Draghi, B. Rotenberg, D. Bauer, **B. Coasne**, Lattice Boltzmann method for adsorption under stationary and transient conditions: Interplay between transport and adsorption kinetics in porous media, *Phys. Rev. E* **104**, 015314 (2021).

P162. R. Bey, **B. Coasne**, C. Picard, Carbon dioxide as a line active agent: its impact on line tension and nucleation rate, *Proc. Nat. Acad. Sci.* **118**, e2102449118 (2021).

+ CNRS communication: <https://inp.cnrs.fr/fr/cnrsinfo/le-co2-comme-tensioactif-de-ligne-dans-un-nanopore>

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3. Book or Book Chapters (3)

B3. D. Farrusseng, **B. Coasne**, [Solides nanoporeux: de l'utilité des trous en science des matériaux](#), Etonante Chimie !, Ouvrage de Vulgarisation, *CNRS Editions* (2020).

B2. G. Ori, C. Massobrio, **B. Coasne**, [Molecular modeling of glassy surfaces](#), Molecular dynamics of disordered systems, *Springer* (2015).

B1. R. J. M. Pellenq, **B. Coasne**, P. E. Levitz “[Adsorption and Condensation of Xenon in Mesopores having a Microporous Texture or a Surface Roughness](#)”, *Molecular Simulation of Adsorption Phenomena* Eds. N. Quirke and D. Nicholson, Taylor and Francis, London (2005).

4. Invited conferences (53)

I53. B. Coasne, [Adsorption and diffusion in nanoporous materials: the view from the nanoscale](#) (Keynote talk), *CPM-9 - the 9th International Workshop “Characterization of Porous Materials: from Angstroms to Millimeters”*, Delray Beach, FL, USA (2024).

I52. B. Coasne, [On De Gennes narrowing for molecularly confined fluids](#) (invited talk, symposium ‘Liquid and electrolyte anomalies in nano-confinement: structure, dynamics, reactivity’), *ACS Meeting 2024*, New Orleans, LA, USA (2024).

I51. B. Coasne, [Bridging Molecular Dynamics and Macroscopic Transport in Nanoporous Materials](#) (invited talk), *CECAM Workshop “Fluids in porous materials: from fundamental physics to engineering applications”*, EPFL Lausanne, Switzerland (2023).

I50. B. Coasne, [Dynamics in compliant nanoporous materials: Coupling multiscale dynamics and mechanics](#) (invited talk), *Modelling Complexity in Mechanics*, Alghero, Sardinia, Italy (2023).

I49. B. Coasne, [Oversolubility in nanoconfinement: from adsorption in porous media to wetting of interfaces](#) (invited talk, symposium ‘Reactivity in nanoconfined interfaces’), *ACS Meeting 2023*, Indianapolis, IN, USA (2023).

- I48. B. Coasne**, [Reduced phase stability and faster formation/dissociation kinetics in confined methane hydrate](#) (invited talk), *GDR Hydrates*, Rueil Malmaison (Paris), France (2022).
- I47. B. Coasne**, [Adsorption and Transport in Nanoporous Materials](#) (keynote, colloque 10), *Matériaux 2022*, Lille, France (2022).
- I46. B. Coasne**, [Wetting and phase transitions of ionic liquids at metal surfaces: Electronic screening using a virtual Thomas–Fermi](#), *CECAM Workshop on Ion adsorption and electrokinetic transport at interfaces*, Marcoule (Avignon), France (2022).
- I45. B. Coasne**, [Gas Adsorption in Zeolite and Thin Zeolite Layers: Molecular Simulation, Experiment and Adsorption Potential Theory](#), *8th Workshop “Prospects & Challenges in Zeolites and Related Porous Materials”*, Cabourg/Caen, France (2022).
- I44. B. Coasne**, [Multiscale diffusion in carbonaceous materials](#), *CECAM Workshop on adsorption in microporous carbons for a range of societal and emerging applications*, Bordeaux, France (2022).
- I43. B. Coasne**, [Adsorption and diffusion in zeolitic materials](#), *Groupe Français des Zeolithes (GFZ)*, Vogue (Ardeche), France (2022). [Keynote Invitation](#).
- I42. B. Coasne**, [Fluid adsorption and diffusion in zeolitic materials](#), *First International Edition of the 21st Chinese Zeolite Conference (21CZC)*, Qingdao, Shandong Province, China (2021). [Visioconference](#).
- I41. B. Coasne**, [Adsorption and transport in nanoconfinement](#), *Summer Workshop nanoCAFÉ group* (Sapienza Università di Roma), Siena (Tuscany), Italy (2021). [3 seminars on “Adsorption and criticality in nanoconfined fluids”, “Wetting and phase transitions at metallic surface”, “Bottom up model of dynamics/transport in porous media”](#)
- I40. B. Coasne**, [Fluid adsorption and transport in nanoporous materials](#), *Annual meeting of the German Adsorption Society*, Frankfurt, Germany (2021)..
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- I33. B. Coasne**, [Multiscale adsorption and transport in porous materials](#), *Workshop Modèles cinétiques pour les milieux poreux*, Bordeaux, France (2019).

- I32. B. Coasne**, [Atom-scale simulation of adsorption and transport in nanoporous media \(keynote\)](#), *Symposium on Acoustics of Nanoporous Materials*, Salford University, Manchester, UK (2019).
- I31. B. Coasne**, [Multiscale adsorption and transport in porous materials](#), *Colloque Matériaux poreux: Synthèse, Propriétés, Applications*, College de France, Paris, France (2019).
- I30. B. Coasne**, [Hydrocarbon adsorption and transport in realistic molecular model of kerogen's structure](#), *2018 MRS International Materials Research Congress*, Cancun, Mexico (2018).
- I29. B. Coasne**, [Adsorption et transport dans les milieux nanoporeux](#), *Journées de la Matière Condensée 2018*, Molecular liquids under micro/mesoporous confinement, Grenoble, France (2018).
- I28. B. Coasne**, [Realistic molecular model of kerogen in gas shales: hydrocarbon adsorption and transport \(keynote 30\)](#), *Matériaux 2018 – Symposium Matériaux Carbonés*, Strasbourg, France (2018).
- I27. B. Coasne**, [Desorption: drying at the nanoscale?](#), *The Physics of Drying*, Marne-La-Vallée, France (2018).
- I26. B. Coasne**, [Molecular Approach to Adsorption in Multiscale Porous Materials](#), *1st International GFZ edition*, Cabourg, France (2018).
- I25. B. Coasne**, [Oversolubility effects in nanoconfined solvents](#), *2018 MRS International Materials Research Congress*, Cancun, Mexico (2018).
- I24. B. Coasne**, [Modeling Adsorption and Transport in Multiscale Porous Materials](#), *Materials, Characterization, Catalysis*, Zurich, Switzerland (2018).
- I23. B. Coasne**, [Adsorption and Transport in Multiscale Porous Materials](#), *American Institute of Chemical Engineers*, Minneapolis, MN, USA (2017).
- I22. B. Coasne**, [Poroelastic Theory Applied to the Adsorption-Induced Deformation of Vitreous Silica](#) (plenary talk), *6th Biot Conference on Poromechanics*, Paris, France (2017).
- I21. B. Coasne**, [Molecular Modeling of Porous Materials: Structure, Texture and Adsorption Properties](#), *Energy Materials Nanotechnology Mesoporous Materials*, Prague, Czech Republic (2016).
- I20. B. Coasne**, [Adsorption and Transport in Multiscale Porous Media](#), *Multiscale high-performance computational modelling*, EMPA Topical Day, Zurich, Switzerland (2015).
- I19. B. Coasne**, [Atom-scale modelling of elastic and failure properties of clays and clay/organic hybrid materials](#), *Reactive Force Fields: From Development and Implementation to Applications*, RSC Faraday Division and CCP5, Manchester, UK (2015).
- I18. B. Coasne**, [Adsorption and transport in hierarchical porous materials](#), *Fourth Workshop on Zeolites: Prospects & Challenges*, Caen, France (2015).
- I17. B. Coasne**, [Multiscale adsorption and transport in porous materials](#), *6th International Symposium "Advanced microporous and mesoporous materials"*, Black Sea Coast, Bulgaria (2015).

- I16. B. Coasne, [Adsorption and transport in multiscale porous materials](#), *CECAM Workshop "Simulation of systems under thermodynamic-like gradients"*, Zaragoza, Spain (2015).
- I15. B. Coasne, [Adsorption and transport in multiscale porous materials](#), *Workshop MultiScale Porous Materials*, San Sebastian, Spain (2014).
- I14. B. Coasne, [Molecular modeling of Amorphous Porous Materials](#), *European Research Materials Society – Fall Meeting*, Warsaw, Poland (2014).
- I13. B. Coasne, [Adsorption and Transport in Hierarchical Zeolites: The view from the NanoScale](#), *1st International Symposium on Energy Challenges and Mechanics*, Aberdeen, Scotland (2014).
- I12. B. Coasne, [A bottom-up model of adsorption and transport in multiscale porous media](#), *American Society of Mechanical Engineering Annual Meeting*, Montreal, Canada (2014).
- I11. B. Coasne, [Crystallization in porous materials: the view from the nanoscale](#), *4th International Workshop on Crystallization in Porous Media*, Amsterdam, Netherlands (2014).
- I10. B. Coasne, [Chemistry of interfaces between inorganic minerals and porous carbons: implications for the mechanical properties of gas shale](#), *Society of Engineering Science and American Society of Mechanical Engineering Annual Meetings*, Providence, RI, USA (2013).
- I9. B. Coasne, [“Adsorption, intrusion, and freezing in porous silica: the view from the nanoscale”](#). *3rd International Conference on Nanotek (Nanotek 2013)*, Las Vegas, NV, USA.
- I8. B. Coasne, [“Pressure effects in nanoconfined phases”](#). *5th Biot Conference on Poromechanics*, Vienna, Austria (2013).
- I7. B. Coasne, [“Adsorption and transport in hierarchical zeolites: the view from the nanoscale”](#). *2nd Workshop on Zeolites*, Caen, France (2013).
- I6. B. Coasne, [Adsorption and dynamics of ions confined in nanopores: from simple ions to ionic liquids](#), *CECAM Workshop on Aging of Materials*, Zurich, Switzerland (2012).
- I5. B. Coasne, [“Surface chemistry and performance of carbon materials”](#). *Surface Chemistry and Performance of Carbon materials*, Budapest, Hungary (2012).
- I4. B. Coasne, [“Adsorption and dynamics of water and ions in nanopores”](#). *32nd International Conference on Solution Chemistry*, La Grande Motte, France (2011).
- I3. B. Coasne, [“Simulation moléculaire de l’adsorption et confinement de fluides dans des adsorbants microporeux et mesoporeux”](#). *26^e Réunion du Groupe Français des Zéolithes*, Presqu’île de Giens, France (2010).
- I2. B. Coasne, ["Development of realistic models of MCM-41 materials for gas adsorption studies"](#). *CECAM Workshop on Surfactant Templated Porous Materials: Synthesis and Characterisation*, Zurich, Switzerland (2008).
- I1. B. Coasne, ["Transition de phase dans des matériaux nanoporeux”](#). *Matériaux Hybrides Organisés Multifonctionnels (HMOM)*, La Grande Motte, France (2006).

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- O175.** S. Gravelle, B. Coasne, [Separation of water and ethanol mixtures by nanoporous organosilica: a molecular dynamics study](#), *French/German Adsorption Conference*, Strasbourg, France (2023).
- O174.** L. Didier, A. Sam, R. Venegas, B. Coasne, [Molecular simulation of fluid adsorption in nanoporous materials](#), *French/German Adsorption Conference*, Strasbourg, France (2023).
- O173.** W. Kellouai, P. Judeinstein, M. Plazanet, B. Coasne, [Adsorption and Transport in Zeolitic Materials](#), *9th Conference of the Federation of the European Zeolite Associations*, Portorož-Portorose, Slovenia (2023).
- O172.** A. Schlaich, D. Jin, L. Bocquet, B. Coasne, [Wetting and phase transitions of ionic liquids at metal surfaces: Elec-tronic screening using a virtual Thomas–Fermi](#), *Journées de l'Association Française de l'Adsorption*, Nancy, France (2023).
- O171.** A. Schlaich, D. Jin, L. Bocquet, B. Coasne, [Wetting and phase transitions of ionic liquids at metal surfaces: Elec-tronic screening using a virtual Thomas–Fermi](#), *Fundamentals of Adsorption 14*, Broomfield, CO, USA (2022).
- O170.** B. Coasne, [Confinement de fluides dans des matériaux nanoporeux](#), *Journée des utilisateurs GRICAD*, Grenoble, France (2021).
- O169.** M. Chen, B. Coasne, R. Guyer, D. Derome, J. Carmeliet, [Where lies hysteresis in materials undergoing sorption-induced swelling?](#), *POROTEC*, Germany (2019).
- O168.** A. Gossard, B. Coasne, M. Nidal Ben Abdelouahab, P. Coussot, [Drying thanks to nano-films?](#), *INTERPORE 2019*, Valencia, Spain (2019).
- O167.** A. Schlaich, B. Coasne, [Coupling of Adsorption and Transport in Hierarchical Porous Materials](#), *INTERPORE 2019*, Valencia, Spain (2019).
- O166.** M. Bah, E. D. Manga, P. da Costa, M. Drobek, A. Ayral, G. Despaux, E. Le Clezio, A. Julbe, B. Coasne, [Acoustic Footprint of Gas Permeation through Porous Materials](#), *Groupe Français des Zéolithes 2019*, Ile de Porquerolles, France (2019).
- O165.** D. Jin, B. Coasne, [Phase Stability and Formation Kinetics of Methane Hydrate in Nanoporous Media](#), *Fundamentals of Adsorption 2019*, Cairns, Australia (2019).
- O164.** Z. Zaafouri, B. Coasne, G. Batot, C. Nieto-Draghi and D. Bauer, [TRT-Lattice Boltzmann simulation of transport and adsorption in porous media](#), *14th World Congress in Computational Mechanics (WCCM)*, Paris, France (2019).
- O163.** I. C. Medeiros-Costa, C. Laroche, J. Perez-Pellitero, B. Coasne, [Advanced characterization of hierarchical zeolites for optimal xylene separation](#), *Materials, Characterization, and Catalysis Workshop*, Zurich, Switzerland (2018).
- O162.** B. Coasne, [Transport as a tool to characterize multiscale porous media](#), *8th International Workshop on Characterization of Porous Materials: From Ångströms to Millimeters*, Delray Beach, FL (2018).

- O161.** M. Bah, E.D. Manga, M. Drobek, E. Le Clezio, G. Despaux, P. Da Costa, A. Ayral, B. Coasne, [A. Julbe, Acoustic emission monitoring: A novel diagnostic tool for characterization of porous ceramic membranes during gas permeation](#), Keynote Oral presentation, *15th International Conference on Inorganic Membranes*, Dresden, Germany (2018).
- O160.** I. C. Medeiros Costa, C. Laroche, J. Perez-Pellitero, B. Coasne, [Advanced characterization of hierarchical zeolites for optimal xylene separation](#), American Institute of Chemical Engineering, Pittsburgh, PA, USA (2018).
- O159.** C. Zhang, B. Coasne, D. Derome, J. Carmeliet, [Hygro-thermo-mechanical behavior of softwood lignin studied by molecular dynamics](#), EMI 2018, Boston, MA, USA (2018).
- O158.** A. C. Bueno, L. Roiban, B. Coasne, Y. Schuurman, M. Klotz, D. Farrusseng, [Materials with oriented hierarchical porosity as catalyst support](#), *12th International Symposium on the Scientific Bases for the Preparation of Heterogeneous Catalysts*, Louvain-la-neuve, Belgium (2018).
- O157.** M. Chen, B. Coasne, R. Guyer, D. Derome, J. Carmeliet, [Origin of sorption hysteresis of micro-porous polymers: an explanation based on hydrogen bonds](#), *Interpore 10th Annual Meeting*, New Orleans, LA, USA (2018).
- O156.** D. Jin, B. Coasne, [Effects of Confinement and Surface Force on Methane Hydrate in Porous Media](#), *Interpore 10th Annual Meeting*, New Orleans, LA, USA (2018).
- O155.** B. Coasne, [Adsorption and Transport in Multiscale Porous Media](#), *Interpore 10th Annual Meeting*, New Orleans, LA, USA (2018).
- O154.** M. Bah, E. D. Manga, M. Drobek, E. Le Clezio, G. Despaux, P. Da-Costa, B. Coasne, A. Ayral, A. Julbe, [L'émission acoustique comme outil de diagnostic en temps réel lors de la perméation gazeuse au travers de membranes céramiques poreuses](#), *Journées du Groupe Français de la Céramique 2018*, Bordeaux, France (2018).
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- O152.** M. Chen, B. Coasne, R. Guyer, D. Derome, J. Carmeliet, [A comparative study on sorption-induced deformation and related hysteresis of micro- and meso-porous materials](#), EMI 2018, Boston, MA, USA (2018).
- O151.** M. Chen, B. Coasne, R. Guyer, D. Derome, J. Carmeliet, [A multi-scale study of sorption-induced swelling of wood and related hysteresis](#), Eighteenth European Conference on Composite Materials (ECCM 18), Athens, Greece (2018).
- O150.** C. Hadji, C. Latargez, B. Coasne, H. Bodiguel, B. Dollet, E. Lorenceau, [Thin liquid films for gas separation](#), EUFOAM 2018, Liege, Belgium (2018).
- O149.** P. Judeinstein, M. Maréchal, L. Noirez, B. Coasne, [Ionic liquids: the prepeak paradox](#), *Journées de la Matière Condensée 2018*, Grenoble, France (2018).

- O148.** Z. Zaafouri, B. Coasne, G. Batot, C. Nieto-Draghi, D. Bauer, [Influence of adsorption on transport in flow conditions](#), *14emes Journées d'Etude des Milieux Poreux*, Nantes, France (2018).
- O147.** I. C. Medeiros Costa, C. Laroche, J. Perez-Pellitero, B. Coasne, [Advanced characterization of hierarchical zeolites for optimal xylene separation](#), American Institute of Chemical Engineers, Pittsburgh, PA, USA (2018).
- O146.** [M. Chen](#), B. Coasne, R. Guyer, D. Derome, J. Carmeliet, [Analysis of Sorption and Mechanical Hysteresis of Nano-Porous Materials Upscaling Molecular Simulations by Dependent Domain Theory](#), *6th Biot Conference on Poromechanics*, Paris, France (2017).
- O145.** M. Lépinay, L. Broussous, C. Licitra, F. Bertin, V. Rouessac, [A. Ayrail](#), B. Coasne, [Better characterization of microporous organosilica films through combining ellipsometric porosimetry and molecular simulation](#), *11th International Symposium on the Characterization of Porous Solids*, Avignon, France (2017).
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- O143.** [M. Chen](#), K. Kulasinski, B. Coasne, Guyer, R., D. Derome, J. Carmeliet, [Multi-scale modeling of adsorption-induced deformation of micro-porous materials](#), *Engineering Mechanics Institute Conference 2016*, Nashville, TN, USA (2016).
- O142.** A. Galarneau, F. Fajula, F. Guenneau, A. Gedeon, [B. Coasne](#), [Adsorption and transport in hierarchical microporous/mesoporous materials](#), *Fundamentals of Adsorption 12*, Lake Constance, Germany (2016).
- O141.** [S. Hocine](#), B. Siboulet, R. Hartkamp, B. Coasne, M. Duvail, J. F. Dufreche, [Adsorption along the alkali series on silica surfaces : reversal of adsorption selectivity with pH studied with molecular dynamics](#), *5emes Journées de l'Association Française de l'Adsorption*, Paris, France (2016).
- O140.** [A. Obliger](#), R. J. M. Pellenq, F. J. Ulm, B. Coasne, [Adsorption effects on transport of hydrocarbon mixtures in disordered nanoporous media](#), *Fundamentals of Adsorption 12*, Lake Constance, Germany (2016).
- O139.** [L. Broussous](#), M. Lépinay, B. Coasne, C. Licitra, V. Rouessac, A. Ayrail, [Molecular simulation contribution to porous low-k pore size determination after damage by etch and wet clean processes](#), *Symposium on Ultra Clean Processing of Semiconductor Surfaces*, Knokke-Heist, Belgium (2016).
- O138.** [R. Pellenq](#), A. Obliger, B. Coasne, F. Ulm, [The texture-transport properties relation in kerogen phases](#), *Carbon 2016*, State College PA, USA (2016).
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- O135.** C. Bousige, F. J. Ulm, R. Pellenq, B. Coasne, [Realistic molecular model of mature and immature kerogens in organic-rich shales](#), *Engineering Mechanics Institute Conference – 2015* (EMI 2015), Stanford, CA, USA (2015).
- O134.** L. Brochard, G. Hantal, R. Pellenq, F. –J. Ulm, B. Coasne, [Upscaling molecular simulations of failure through size effects](#), *Engineering Mechanics Institute Conference – 2015* (EMI 2015), Standford, CA, USA (2015).
- O133.** T. Lee, B. Coasne, R. Pellenq, F. J. Ulm, L. Bocquet, [Retarded desorption from porous media caused by wetting/dewetting of the external surface](#), *American Physical Society APS 2015*, San Antonio, TX, USA (2015).
- O132.** L. Bocquet, T. Lee, B. Coasne, [Retarded desorption from porous media caused by wetting/dewetting of the external surface](#), *Low permeability media and nanoporous materials from characterisation to modelling*, Paris, France (2015).
- O131.** B. Coasne, K. Falk, R. Pellenq, F. J. Ulm, L. Bocquet, [Subcontinuum mass transport of condensed hydrocarbons in nanoporous media](#), *Low permeability media and nanoporous materials from characterisation to modelling*, Paris, France (2015).
- O130.** L. Broussous, M. Lépinay, B. Coasne, C. Licitra, F. Bertin, V. Rouessac, A. Ayral, [Contribution of Molecular Simulation to the characterization of porous low-k materials](#), *Materials for Advanced Metallization Conference MAM2015*, Grenoble, France (2015).
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- O127.** P. Judeinstein, M. Zeghal, B. Coasne, [Electrolytes nanostructurés lyotropes à base de liquides ioniques](#), *Systèmes Anisotropes Auto-organisés CFCL 2015*, Autrans, France (2015).
- O126.** M. Zeghal, P. Judeinstein, B. Coasne, [Nanostructured lyotropic electrolytes based on ionic liquids](#), *Juelich Soft Matter Days 2015*, Juelich, Germany (2015).
- O125.** **B. Coasne**, [Le kérogène, un charbon poreux?](#), *Journée de réflexion « Gaz et huiles de schiste, leur exploitation : concepts fondamentaux et verrous technologiques »*, Paris, France (2014).
- O124.** L. Deliere, S. Topin, J.P. Fontaine, C. Daniel, Y. Schuurman, **B. Coasne**, D. Farrusseng, [Capture du xenon à l'aide de zéolithe Ag-ZSM-5](#), *2emes Journées de l'Association Française de l'Adsorption*, Paris, France (2014).
- O123.** M. Lépinay, **B. Coasne**, L. Broussous, K. Courouble, C. Licitra, François Bertin, Vincent Rouessac, André Ayral, [Expérience et simulation moléculaire de l'adsorption de solvants sur des surfaces de silice fonctionnalisées](#), *2emes Journées de l'Association Française de l'Adsorption*, Paris, France (2014).

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- O120.** K. I. Falk, R. Pellenq, F. J. Ulm, L. Bocquet, **B. Coasne**, [Hydrocarbon transport through porous carbons: on the validity of Darcy's law](#), *Nanoporous Materials – 7*, Niagara Falls, Canada (2014).
- O119.** P. Billefont, G. De Weireld, **B. Coasne**, [Adsorption of carbon dioxide, methane, and their mixture in porous carbons in the presence of water](#), *Carbon 2014*, Jeju Island, Korea (2014).
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- O117.** L. Deliere, S. Topin, J. P. Fontaine, C. Daniel, Y. Schuurman, **B. Coasne**, D. Farrusseng, [Capture du xenon dans une zeolithe Ag-ZSM-5](#), *30^e Réunion du Groupe Français des Zeolithes*, Ile de Ré, France (2014).
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- O115.** R. Hartkamp, **B. Coasne**, [Adsorption and transport of ions confined in realistic porous materials: from simple to radioactive ions](#), *Adsorption of Ions at Solid-Electrolyte Interfaces*, Leiden, The Netherlands (2014).
- O114.** F. Villemot, A. Galarneau, **B. Coasne**, [Adsorption and Dynamics in Hierarchical Metal Organic Frameworks](#), *Nanoporous Materials – 7*, Niagara Falls, Canada (2014).
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- C23.** C. Abrioux, **B. Coasne**, G. Maurin, J. C. Giuntini, F. Henn, A. Boutin, A. H. Fuchs, C. Nieto-Draghi, "[Influence du potentiel interatomique sur la distribution cationique dans les zéolithes de type Faujasite](#)". *23^e Réunion du Groupe Français des Zéolithes*, La Grande Motte, France (2007).
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- S82. B. Coasne**, [Confinement and wetting in nanoporous metallic materials](#), *n-AQUA project*, Cambridge, UK (2024).
- S81. B. Coasne**, [Theory and molecular simulation of gas adsorption and transport in nanoporous materials](#), *International Adsorption Society Webinar Series*, USA (2023). [[visio-conference](#)]
- S80. B. Coasne**, [Adsorption in Metallic Nanoporous Materials](#), *Univ. Maryland*, Bethesda (Washington), USA (2023). [[visioconference](#)]
- S79. B. Coasne**, [Adsorption and Transport in Nanoporous Materials](#), *Commission Scientifique LOCIE*, Chambéry, France (2023).
- S78. B. Coasne**, [Diffusion and transport in nanoporous materials](#), *TOTAL Energies*, Pau, France (2023).
- S77. B. Coasne**, [Adsorption et transport de fluides dans des matériaux nanoporeux](#), *Séminaire donné dans le cadre de la Chaire Innovation du Collège de France (Pr. Lydéric Bocquet)*, Collège de France, Paris, France (2023).
- S76. B. Coasne**, [Adsorption and confinement in nanoporous materials](#), *TOTAL Energies*, Pau, France (2022).
- S75. B. Coasne**, [Transport dans les matériaux poreux: de l'échelle nanométrique au milieu continu](#), *TEC21*, Grenoble, France (2022).
- S74. "Fluid Adsorption and Transport in Nanoporous Materials"**, *Manchester University*, Manchester, UK (March 01, 2021). On-line seminar due to COVID-19.
- S73. "Fluid Adsorption and Transport in Nanoporous Materials"**, *Univ. Caen/ENSICAEN*, Caen, France (Feb. 02, 2021).
- S72. "Adsorption and Transport in Subnanoporous Media: Theory and Molecular Modeling"**, *ETH Zurich*, Zurich, Switzerland (February 18, 2020).
- S71. "Adsorption and Transport in Multiscale Porous Media"**, *Oslo University*, Oslo, Norway (August 29, 2019).
- S70. "Physique des Gaz de Schiste: Une Vision Moléculaire"**, *Université François Rabelais de Tours*, Tours, France (March 22, 2018).
- S69. "Adsorption and Transport in Multiscale Porous Media"**, *Université Franche Comté*, Besançon, France (February 12, 2018).
- S68. "Adsorption dans les matériaux poreux multiéchelles"**, *Institut de Chimie et des Matériaux de Paris Est*, Thiais, France (January 13, 2017).
- S67. "Adsorption and Transport in Multiscale Porous Media"**, *Freie Universität*, Berlin, Germany (February 15, 2017).
- S66. "Adsorption and Transport in Multiscale Porous Media"**, *Laboratoire Charles Coulomb*, Montpellier, France (April 18, 2017).

- S65.** "[Adsorption and Transport in Multiscale Porous Media](#)", *New Jersey Institute of Technology*, Newark, NJ, USA (November 06, 2017).
- S64.** "[Adsorption et transport multiéchelles dans les matériaux poreux](#)", *Science et Ingénierie des Matériaux et Procédés*, Grenoble, France (March 24, 2016).
- S63.** "[Adsorption et transport multiéchelles dans les matériaux poreux](#)", *Institut de Physique de Rennes*, Rennes, France (June 06, 2016).
- S62.** "[Adsorption and transport in multiscale porous materials](#)", *IFPEN Rueil Malmaison*, Rueil Malmaison, France (September 22, 2016).
- S61.** "[Adsorption and condensation in porous materials: The view from the nanoscale](#)", *ST Microelectronics*, Crolles-Grenoble, France (October 05, 2016).
- S60.** "[Adsorption and Transport in Multiscale Porous Media](#)", *Montanuniversitaet Leoben*, Leoben, Austria (December 12, 2016).
- S59.** "[Adsorption et transport multiéchelles dans les solides poreux](#)", *Saint Gobain CREE*, Cavaillon, France (February 12, 2015).
- S58.** "[Multiscale Adsorption and Transport in Porous Media](#)", *IBM Almaden Research Center*, San Jose, CA, USA (June 16, 2015).
- S57.** "[Caractérisation des milieux poreux](#)", *Saint Gobain CREE*, Cavaillon, France (October 02, 2015).
- S56.** "[Freezing in porous materials: the view from the nanoscale](#)", *Heriot-Watt University, School of Engineering and Physical Sciences*, Edinburgh, Scotland, UK (Janvier 15, 2014).
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- S53.** "[Adsorption et transport dans les solides poreux hierarchises](#)", *IFP – Energies Nouvelles*, Solaize, France (Sep. 26, 2014).
- S52.** "[Adsorption et transport dans les solides poreux hierarchises](#)", *Laboratoire de Physique Interdisciplinaire de Physique (LIPHY)*, Université Joseph Fourier, Grenoble, France (Oct. 02, 2014).
- S51.** "[Multiscale Modeling of Amorphous Porous Materials](#)", *Workshop « Materials Modeling »*, Institut Physique Chimie des Matériaux de Strasbourg, Université Strasbourg, France (Oct. 03, 2014).
- S50.** "[Adsorption and transport of simple fluids and ionic liquids in porous media](#)", *Laboratoire Leon Brillouin*, CNRS et CEA Saclay, France (Dec. 10, 2014).
- S49.** "[Adsorption and transport in porous materials](#)", *ETH - EMPA*, Zurich, Switzerland (May 08, 2013).

- S48. "[Adsorption and transport in porous materials](#)", *CEA Bruyeres le Chatel*, Arpajon, France (June 03, 2013).
- S47. "[Molecular simulation of adsorption and dynamics in nanopores](#)", *2nd Practical Summer School of Labex Chemisyst – Fondation Balard*, Montpellier, France (Jul 04, 2013).
- S46. "[Approche moléculaire de l'adsorption et du transport dans des matériaux poreux](#)", Saint Gobain CREE, Cavaillon, France (September 25, 2013).
- S45. "[Adsorption et transport dans les matériaux poreux hiérarchisés](#)", LASIR, Lille, France (September 26, 2013).
- S44. "[Freezing in porous materials: the view from the nanoscale](#)", Princeton University, Civil and Environmental Engineering, Princeton, NJ, USA (October 07, 2013).
- S43. "[Molecular simulation of adsorption and dynamics in nanoporous solids](#)", ETH - EMPA, Zurich, Switzerland (January 20, 2012).
- S42. "[High pressure effects in nanoconfined phases](#)", Laboratoire Charles Coulomb (L2C), Montpellier, France (February 20, 2012).
- S41. "[High pressure effects in nanoconfined phases](#)", Laboratoire Physicochimie des Electrolytes, Colloïdes et Sciences Analytiques (PECSA), Université Pierre et Marie Curie, France (April 24, 2012).
- S40. "[Simulation et modélisation de la dynamique et du transport dans des nanomembranes](#)", Journées Avenir de la filière membranaire en Languedoc-Roussillon, Pole de Compétitivité TRIMATEC Languedoc-Roussillon, France (April 26, 2012).
- S39. "[High pressure effects in nanoconfined phases](#)", Département de Chimie, Ecole Normale Supérieure de Lyon, France (June 01, 2012).
- S38. "[High pressure effects in nanoconfined phases](#)", Institut Physique Chimie des Matériaux de Strasbourg, Université Strasbourg, France (June 28, 2012).
- S37. "[Molecular simulation of adsorption and dynamics of solvents and ions in nanopores](#)", *1st Practical Summer School of Labex Chemisyst – Fondation Balard*, Montpellier/Cevennes, France (2012).
- S36. "[Simulation de l'adsorption et de la diffusion de molécules dans des solides poreux](#)", Institut de Science des Matériaux de Mulhouse, Mulhouse, France (April 28, 2011).
- S35. "[Apport de la modélisation moléculaire à l'étude des matériaux](#)", Journée Scientifique Pole Chimie Balard / Saint Gobain, Montpellier, France (Juin 24, 2011).
- S34. "[Adsorption and dynamics of water and ions confined in nanopores](#)", *6th European Practical School of Separation and Analytical Chemistry of Marcoule*, Marcoule, France (July 2011).
- S33. "[Modelisation moleculaire multi-échelle des matériaux: propriétés physiques, chimiques et structurales](#)", Saint Gobain CREE, Cavaillon, France (September 09, 2011).
- S32. "[Le gel de l'eau dans les mésopores du ciment](#)", *Ecole thématique Physique, Chimie et Mécanique des matériaux cimentaires*, La Grande Motte, France (2011).

- S31.** “[Apport de la simulation moléculaire à l’étude des solides poreux](#)”, Institut de Recherches sur la Catalyse et l’Environnement (IRCELyon), Lyon, France (April 26, 2010)
- S30.** “[Apport de la simulation moléculaire à l’étude des solides poreux](#)”, Laboratoire de Chimie de la Matière Condensée de Paris, Paris, France (May 19, 2010)
- S29.** “[Théorie et modélisation moléculaire: de la molécule au matériau en passant par les architectures moléculaires](#)”, *Journée d’échange scientifique entre l’ICGM et l’ICSM*, Marcoule, France (2010).
- S28.** “[Adsorption, freezing and dynamics of fluids confined in nanoporous materials](#)”, Department of Chemistry and Biochemistry, University of Maryland, College Park, MD, USA (October 12, 2010)
- S27.** “[Apport de la modélisation moléculaire aux sciences des matériaux](#)”, Saint Gobain CREE, Cavaillon, France (July 02, 2009).
- S26.** [Theory and molecular modeling of transport in nanoporous membranes](#), *4th European Practical School of Separation Chemistry*, Marcoule, France (2009).
- S25.** [Théorie et modélisation moléculaire: de la molécule au matériau en passant par les architectures moléculaires](#), *Conseil Scientifique de l’Institut Charles Gerhart Montpellier*, Montpellier, France (2009).
- S24.** “[Modélisation moléculaire de l’adsorption, intrusion, structure et dynamique de fluides dans des nanopores](#)”, Faculté Polytechnique de Mons, Mons, Belgique (November 17, 2009).
- S23.** “[Adsorption et dynamique de liquides complexes confinés dans des nanopores](#)”, Centre Interdisciplinaire des Nanosciences de Marseille, Marseille, France (November 24, 2009)
- S22.** “[Freezing in nanoporous materials](#)”, Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC, USA (December 05, 2008).
- S21.** “[Solidification et structure de fluides confinés dans des nanopores](#)”, Laboratoire de Physique Théorique, CNRS - Université Paul Sabatier/Toulouse (February 20, 2007).
- S20.** “[Modélisation moléculaire de l’adsorption et intrusion de fluides dans un milieu nanoporeux](#)”, Matériaux Divisés, Revêtements, ELectrocéramiques MADIREL, CNRS - Université de Provence (October 11, 2007).
- S19.** “[Modélisation moléculaire de l’adsorption et intrusion de fluides dans un milieu nanoporeux](#)”, Laboratoire de Physique de la Matière Condensée et Nanostructures, CNRS – Université Claude Bernard Lyon I (October 12, 2007).
- S18.** “[Molecular modeling of adsorption and intrusion in nanoporous materials](#)”, Institute of Physics, Adam Mickiewicz University, Poznan, Poland (October 17, 2007).
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- S16.** "[Transitions de phase de fluides confinés dans des matériaux nanoporeux](#)", Laboratoire de Chimie Physique, CNRS - Université de Paris-Sud Orsay (January 13, 2006).
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- S14.** "[Cristallisation dans un milieu poreux](#)", Workshop sur la cristallisation en milieu confiné, Centre de Recherche en Matière Condensée et Nanosciences, CNRS – Marseille (September 08, 2006).
- S13.** "[Transitions de phase de fluides confinés dans des matériaux nanoporeux](#)", Laboratoire des Colloïdes, Verres et Nanomatériaux, CNRS - Université Montpellier 2 (November 09, 2006).
- S12.** "[Molecular simulation of phase transitions in nanoporous materials](#)", Institute of Organic Chemistry and Biochemistry, Center for Complex Molecular Systems and Biomolecules, Prague, Czech Republic (September 17, 2005).
- S11.** "[Molecular simulation of phase transitions in nanoporous materials](#)", Institute of Physics, Adam Mickiewicz University, Poznan, Poland (September 23, 2005).
- S10.** "[Etude expérimentale et par simulation moléculaire des transitions de phase dans un milieu nanoporeux](#)", Laboratoire de Chimie de l'école normale supérieure de Lyon (December 09, 2003).
- S9.** "[Etude expérimentale et par simulation moléculaire des transitions de phase dans un milieu nanoporeux](#)", Laboratoire Environnement et Minéralurgie, CNRS/INPL (December 11, 2003).
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- S6.** "[Etude expérimentale et par simulation moléculaire des transitions de phase dans un milieu nanoporeux](#)", Matériaux Divisés, Revêtements, ELectrocéramiques MADIREL, CNRS - Université de Provence (December 17, 2003).
- S5.** "[Etude expérimentale et par simulation moléculaire des transitions de phase dans un milieu nanoporeux](#)", Laboratoire de Chimie Physique, CNRS - Université de Paris-Sud Orsay (December 18, 2003).
- S4.** "[Etude expérimentale et par simulation moléculaire des transitions de phase dans un milieu nanoporeux](#)", Laboratoire de Physique de la Matière Condensée et Nanostructures, CNRS – Université Claude Bernard Lyon I (December 19, 2003).
- S3.** "[Etude de la physisorption/ condensation de gaz dans un matériau mésoporeux](#)", Centre de Recherche sur la Matière Divisée CRMD, CNRS - Université d'Orléans (June 28, 2002).

S2. "Apport des simulations Monte Carlo dans l'ensemble Grand Canonique à l'étude de la physisorption/condensation de gaz dans un matériau mésoporeux", Laboratoire de Physique Moléculaire, CNRS - Université de Franche Comté (December 10, 2002).

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8. Participations à des ouvrages ou revues spécialisés (9)

- D9.** Interview par D. Larousserie/Le Monde, « [Lydéric Bocquet, un physicien qui porte haut l'art du ricochet \(portrait\)](#) », (Le Monde 08/04/2023).
- D8.** D. Bauer, **B. Coasne**, [Simulation du couplage adsorption/transport via une approche Lattice-Boltzmann](#), Science@IFPEN, Lettre actualité IFP Energies Nouvelles (2023).
- D7.** D. Farrusseng, **B. Coasne**, [Les matériaux nanoporeux: de l'utilité des trous en chimie des matériaux](#), « Etonante Chimie », Editions CNRS (2020).
- D6.** D. Farrusseng, **B. Coasne**, [Les matériaux poreux « Metal Organic Frameworks »](#), Revue Usine Nouvelle (2020).
- D5.** C. Bousige, C. Matei Ghimbeu, C. Vix-Guterl, A. E. Pomerantz, A. Suleimenova, G. Vaughan, G. Garbarino, M. Feygenson, C. Wildgruber, F. -J. Ulm, R.J.-M. Pellenq, **B. Coasne**, [Revealing the molecular structure of kerogen in gas shale, 2016 ESRF Highlights](#), Matter at Extremes, 124-125 (2017).
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- D3.** P. A. Bonnaud, **B. Coasne**, R. J. M. Pellenq, [Le gel de l'eau dans les mésopores du ciment](#), Ciments, Bétons, Plâtres et Chaux 907, 64 (2012).
- D2.** **B. Coasne**, [Le triplement du nucléaire doit être débattu](#), L'Express (Edition Web), Mar. 12 (2010),
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- D1.** E. Bousquet, **B. Coasne**, [Nous comprenons les consommateurs d'eau en bouteilles](#), L'Express (Edition Web), Mar. 12 (2010),
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