

PRODUCTION SCIENTIFIQUE
Période 2015 -2025

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A. Publications dans des revues à comité de lecture

- [21] M. Ceglie, C. Mandriota, G. Carbone, N. Manga and A. Chateauminois
Anisotropic shrinkage and finite strains in confined frictional contacts
To appear in *Tribology International*
- [20] P. Tapie, D. Barreiros Scatamburlo, A. Chateauminois, and E. Wandersman
Soft cavity model for touch mechanoreceptors under static and sliding contact
Physical Review E (2025)
- [19] L. Ciapa, Y. Tran, C. Frétny, A. Chateauminois and E. Verneuil
Molecular adsorption induces normal stresses at frictional interfaces of hydrogels
Soft Matter **21** (2025) 2529-2540
- [18] M. Roman-Faure, H. Montes, F. Lequeux and A. Chateauminois
Weak non-linearities of amorphous polymer under creep in the vicinity of the glass transition
European Journal of Physics E **48** (2025) 4
- [17] L. Ciapa, L. Olanier, Y. Tran, C. Frétny, A. Chateauminois and E. Verneuil
Friction through molecular adsorption at sliding interface of hydrogels: Theory and experiments
Soft Matter **20** (2024) 5933-5944
- [16] A. Augustine, M. Veillerot, N. Gauthier, B. Zhu, Ch.-Y. Hui, Y. Tran, E. Verneuil and Antoine Chateauminois
Swelling induced debonding of thin hydrogel films grafted on silicon substrates
Soft Matter **19** (2023) 5169-5178
- [15] V. Fazio, V. Acito, F. Amiot, C. Frétny and A. Chateauminois
Memory effects in friction: the role of sliding heterogeneities
Proceedings of the Royal Society A **477** (2021) 20210559
- [14] A. Ben Hadj Mabrouk¹, C. Licitra, A. Chateauminois and M. Veillerot
Effect of the molecular weight on the depth profiling of PMMA thin films using low energy Cs⁺ sputtering
Surface and Interface Analysis **53** (2021) 884-892
- [13] G. Violano, A. Chateauminois and L. Afferante
Rate-dependent adhesion of viscoelastic contacts. Part II: Numerical model and hysteresis dissipation
Mechanics of Materials **158** (2021) 103884

- [12] G. Violano, A. Chateauminois and L. Afferante
Rate-dependent adhesion of viscoelastic contacts. Part I: Contact area and contact line velocity within model randomly rough surfaces
Mechanics of Materials **160** (2021) 103926
- [11] G. Violano, A. Chateauminois and L. Afferante
A JKR-like solution for viscoelastic adhesive contacts
Frontiers in Mechanical Engineering **7** (2021) 664486
- [10] L. Ciapa, J. Delavoipiere, Y. Tran, E. Verneuil and A. Chateauminois
Transient sliding of thin hydrogel films: the role of poroelasticity
Soft Matter **16** (2020) 6539-6548
- [9] V. Acito, M. Ciavarella, A.M. Prévost and A. Chateauminois
Adhesive contact of model randomly rough rubber surfaces
Tribology Letters **67** (2019) 54
- [8] J. Delavoipière, B. Heurtefeu, J. Teisseire, A. Chateauminois, Y. Tran, M. Fermigier and E. Verneuil
Swelling dynamics of surface-attached hydrogel thin films in vapor flows
Langmuir **34** (2018) 15238-15244
- [7] J. Delavoipière, Y. Tran, E. Verneuil, B. Herteufeu, C.-Y. Hui and A. Chateauminois
Friction of poroelastic contact with thin hydrogel layers
Langmuir **34** (2018) 9617-9626
- [6] A. Chateauminois, D.T. Nguyen and C. Frétnigny
Effects of local stretch on the frictional stress of rubber
Soft Matter **13** (2017) 5849 - 5857
- [5] C. Frétnigny and A. Chateauminois
Contact on a stretched rubber
Physical Review E **96** (2017) 013001
- [4] A. Hourlier-Fargette, A. Antkowiak, A. Chateauminois and S. Neukirch
Role of uncrosslinked chains in droplets dynamics on silicone elastomers
Soft Matter **13** (2017) 3484-3491
Actualité INSIS: <http://www.cnrs.fr/insis/recherche/actualites/2017/05/elastomere-silicone.html>
- [3] J. Delavoipière, Y. Tran, E. Verneuil and A. Chateauminois
Poroelastic indentation of mechanically confined hydrogel layers
Soft Matter **12** (2016) 8049-8058
- [2] S. Biswas, A. Chakrabarti, A. Chateauminois, E. Wandersman, A. M. Prevost and M.K. Chaudhury
Soft Lithography Using Nectar Droplets
Langmuir **31** (2015) 13155–13164
- [1] S. Yashima, V. Romero, E. Wandersman, C. Frétnigny, M.K. Chaudhury, A. Chateauminois and A.M. Prevost
Normal contact and friction of rubber with model randomly rough surfaces
Soft Matter **11** (2015) 871 - 881

B. Actes de colloques

- [9] V. Fazio, V. Acito, C. Frétny and A. Chateauminois
Unsteady state friction of rubber under curvilinear sliding motions
Proc. 43th Annual Meeting of the Adhesion Society, Feb. 2021, publication en ligne
(<https://www.adhesionsociety.org>)
- [8] L. Ciapa, Y. Tran, A. Chateauminois and E. Verneuil
Transient frictional response of poroelastic contacts with thin hydrogel films
Proc. 43th Annual Meeting of the Adhesion Society, Feb. 2021, publication en ligne
(<https://www.adhesionsociety.org>)
- [7] G. Violano, A. Chateauminois and L. Afferante
Adhesive contact of randomly rough surfaces: experimental and numerical investigations
The 49th AIAS conference, *IOP Conf. Series: Materials Science & Engineering* (2021) **1038** 012049
- [6] J. Delavoipière, Y. Tran, E. Verneuil, C.Y. Hui and A. Chateauminois
Poroelastic dissipation within frictional contacts with thin hydrogel layers
Proc. 17th International Conference on Deformation, Yield and Fracture of Polymers (ICCM 17), Kerkrade, Netherlands, Apr. 2018 (publication électronique)
- [5] J. Delavoipière, Y. Tran, E. Verneuil, C.Y. Hui and A. Chateauminois
Poroelastic dissipation of thin hydrogel layers mechanically confined within contacts
Proc. 42th Annual Meeting of the Adhesion society & 6th WCARP, San Diego, USA, Feb. 2018, publication en ligne
(<https://www.adhesionsociety.org>)
- [4] A. Chateauminois and C. Frétny
Effects of stretching on rubber friction
Proc. 42th Annual Meeting of the Adhesion society & 6th WCARP, San Diego, USA, Feb. 2018, publication en ligne
(<https://www.adhesionsociety.org>)
- [3] J. Delavoipière, Y. Tran, E. Verneuil and A. Chateauminois
Poroelastic indentation of mechanically confined hydrogel layers
Poromechanics VI: Proceedings of the sixth Biot Conference on Poromechanics (BIOT2017), Paris, July 2017, M. Vandamme, P. Dangla, J.-M. Pereira and S. Ghabezloo Eds, ASCE, pp. 873-880
- [2] R. Dubourget, J.-C. Ameline, A. Chateauminois, R. Gauthier, H. Montes, G. Lang, L. Le Polles, N. Lequeux, C. Roiland, J.-B. d'Espinose de Lacaillerie
Stress influence on nuclear quadrupole resonance: experiments, modeling and application as a strain gauge
59th Experimental Nuclear Magnetic Resonance Conference, Asilomar, Californie (USA), March 2017
- [1] S. Yashima, V. Romero, E. Wandersman, C. Frétny, M.K. Chaudhury, A. Chateauminois and A.M. Prevost
Normal contact and friction of rubber with model randomly rough surfaces.
Proceedings of the 16th International Conference on Deformation, Yield and Fracture of Polymers, Kerkrade, Netherlands, March 29-April 2, 2015, J.P Gong and L. Govaert, Eds, p. 55-58

C. Communications invitées dans des conférences internationales

- [6] V.Fazio, V.Acito, F. Amiot, C. Frétny and A. Chateauminois
Unsteady-state friction of rubbers: the role of sliding inhomogeneities
Contac Mechanics International Symposium (CMIS 2024), Lyon, May 19–22, 2024
- [5] V.Fazio, V.Acito, F. Amiot, C. Frétny and A. Chateauminois
Memory effect during unsteady-state friction
Nanomechanical testing conference, Lyon, March 19–22, 2024

- [4] J. Delavoipière, L. Ciapa, Y. Tran, C. Frétny, C.Y. Hui, E. Verneuil and A. Chateauminois
Friction of thin hydrogel films: disentangling the contributions of poroelastic flow and interface molecular interactions
TMS Annual Meeting 2023, San Diego, USA, March 19–23, 2023
- [3] S. Yashima, V. Romero, E. Wandersman, C. Frétny, M.K. Chaudhury, A. Chateauminois and A.M. Prevost
Normal contact and friction of rubber with model randomly rough surfaces
16th International Conference on Deformation, Yield and Fracture of Polymers, Kerkrade, The Netherlands, March 29-April 2, 2015
- [2] A. Chateauminois, C. Frétny
Local friction within sliding contacts between rubber and rough surfaces
14th International Conference on Metallurgical Coatings and Thin Films (ICMCTF14), San Diego, May, 2014
- [1] A. Chateauminois, C. Frétny
Local friction within sliding contacts between rubber and rough surfaces: the role of viscoelastic dissipation
International Nanotribology Forum, Cochin, India, 6-10 January 2014

D. Autres communications invitées

- [7] A. Augustine, Y. Tran, E. Verneuil and A. Chateauminois
Swelling induced debonding in thin hydrogel films
Saint-Gobain / ESPCI workshop, Paris, Mars 2024
- [6] A. Chateauminois
Frottement local d'élastomères en régime stationnaire et transitoire : le rôle des hétérogénéités
Colloque National Mecamat , Janvier 2021 (conférence en ligne)
- [5] A. Chateauminois
Local friction of rough contact interfaces with rubbers
7th International Conference on Materials & Mechanical Engineering (ICAMEM), Hamamet, Tunisie, Décembre 2019
- [4] C. Barrand, A. Chateauminois, N. Pantoustier et C. Frétny
Mousses polymères obtenues par polymérisation d'émulsions fortement concentrées
Workshop Mousses Polymères 2019, Paris, Avril 2019
- [3] C. Poirier, E. Verneuil, C. Frétny et A. Chateauminois
Frottement des mousses solides
Workshop 'Matériaux Très Aérés : déformation, rupture, instabilités', GDR Méphy, Paris, Nov. 2018
- [2] A. Chateauminois
Stiction of adhesive contacts
Workshop Onset of sliding friction, Ecole Centrale de Lyon, Avril 2018
- [1] A. Chateauminois, C. Frétny
Rubber friction: Some open issues from micro/macroscale experiments
Workshop Micro/Nanoscale Models for Tribology, Lorentz Center, Leiden, Feb. 2017

Séminaires

Memory effects in friction: inside the contact
INRIA, Grenoble, December 2021

Friction of thin hydrogel layers grafted on glass substrates: the role of poroelasticity
ETHE, Department of Materials, Zürich, May 2019

Mechanical and frictional properties of thin polymer coatings on rigid substrates
LETI, CEA, Grenoble, novembre 2018

Contact et frottement de films minces d'hydrogels : le rôle de la poroélasticité
Laboratoire du futur (LOF), Pessac, Mars 2018

- [] Frottement de caoutchoucs avec des surfaces rugueuses modèles
Laboratoire LTDS, Ecole Centrale de Lyon, Mai 2015

E. Communications à des conférences

Conférences internationales

- [20] L. Ciapa, J. Delavoipière, Y. Tran, C.-Y. Hui, E. Verneuil and A. Chateauminis
Friction of poroelastic contacts with hydrogel coatings
European Coating Symposium, Paris, 13-15 September, 2023
- [19] A. Augustine, N. Gauthier, M. Veillerot, E. Verneuil, Y. Tran and A. Chateauminis
Hydrogel films as anti-fog coatings: swelling and debonding
European Coating Symposium, Paris, 13-15 September, 2023
- [18] V. Fazio, V. Acito, F. Amiot, C. Frétiigny and A. Chateauminis
Memory effects in friction: the role of sliding non homogenities
7th World Tribology Conference (WTC 2022), Lyon, 10-15 July 2022
- [17] L. Ciapa, Y. Tran, A. Chateauminis and E. Verneuil
Transient sliding of thin hydrogel films: the role of poroelasticity
7th World Tribology Conference (WTC 2022), Lyon, 10-15 July 2022
- [16] A. Augustine, A. Chateauminis, E. Verneuil and Y. Tran
Swelling induced debonding of thin hydrogel films grafted on silicon substrate: the role of interface physical-chemistry
Polymer Network Groups 2022, Rome, 12-16 juin 2022
- [15] A. Augustine, E. Verneuil, A. Chateauminis and Y. Tran
Hydrogel thin films: hydrogel / substrate interfacial properties
35th Conference of the European Colloid & Interface Society (ECIS 2021), Athens, Greece, 5-10 Sept. 2021
- [14] L. Ciapa, Y. Tran, A. Chateauminis and E. Verneuil
Transient frictional response of thin hydrogel films: the role of poroelasticity
35th Conference of the European Colloid & Interface Society (ECIS 2021), Athens, Greece, 5-10 Sept. 2021
- [13] A. Ben Hadj Mabrouk, M. Veillerot, C. Licitra, A. Chateauminis
Impact of the molecular weight on the depth profiling of polymer thin films using low energy Cs⁺
22nd International Conference on Secondary Ion Mass Spectrometry (SIMS-22), Kyoto, Japan, October 20-25, 2019

- [12] J. Delavoipière, Y. Tran, E. Verneuil, C.Y. Hui and A. Chateauminois
Poroelastic sliding of thin grafted hydrogel layers
March Meeting of the American Physical Society, Boston, USA, March 4-8, 2019
- [11] A. Ben Hadj Mabrouk, M.Veillerot and A. Chateauminois
Impact of the molecular weight on the depth profiling of polymer thin films: case study with low energy Cs⁺ as sputtering primary ion
SIMS Europe 2018, Munster, Germany, 16-18 Sept. 2018
- [10] J. Delavoipière, Y. Tran, E. Verneuil, C.Y. Hui and A. Chateauminois
Poroelastic dissipation of thin hydrogel layers mechanically confined within contacts
42th Annual Meeting of the Adhesion society & 6th WCARP, San Diego, USA, Feb. 2018
- [9] A. Chateauminois and C. Frétny
Effects of stretching on rubber friction
42th Annual Meeting of the Adhesion society & 6th WCARP, San Diego, USA, Feb. 2018
- [8] J. Delavoipière, Y. Tran, E. Verneuil and A. Chateauminois
Mist on hydrogel thin films: how swelling kinetics and surface instabilities affect mist pattern
European Polymer Congress, Lyon, July 2017
- [7] J. Delavoipière, Y. Tran, E. Verneuil and A. Chateauminois
Poroelastic indentation of mechanically confined hydrogel layers
Sixth Biot Conference on Poromechanics (BIOT2017), Paris, July 2017
- [6] J. Delavoipière, Y. Tran, E. Verneuil and A. Chateauminois
Poroelastic indentation of mechanically confined hydrogel layers
SoftComp Annual Meeting, Venise, July 2017
- [5] J. Delavoipière, Y. Tran, E. Verneuil, A. Chateauminois
Mist on hydrogel thin films: how swelling kinetics and surface instabilities affect mist pattern
EPF Lyon, France, 3-7 juillet 2017
- [4] R. Dubourget, J.-C. Ameline, A. Chateauminois, R. Gauthier, H. Montes, G. Lang, L. Le Polles, N. Lequeux, C. Roiland, J.-B. d'Espinose de Lacaillerie
Stress influence on Nuclear Quadrupole Resonance: Experiments, Modeling and Application as a Strain Gauge,
Experimental Nuclear Magnetic Resonance Conference (ENC 201), Asilomar, USA, March 2017
- [3] R. Dubourget, J.-C. Ameline, A. Chateauminois, R. Gauthier, H. Montes, G. Lang, L. Le Polles, N. Lequeux, C. Roiland, J.-B. d'Espinose de Lacaillerie
Influence of Stress on the Nuclear Quadrupole Resonance Signal: Modeling, Experiments and Potential Applications as a Strain Gauge
5th Annual Practical Applications of NMR in Industry Conference (PANIC), Hilton Head, Caroline du Sud (USA), Feb. 2017
- [2] R. Dubourget, J.-C. Ameline, A. Chateauminois, R. Gauthier, G. Lang, L. Le Polles, C. Roiland, J.-B. d'Espinose de la Caillerie
Influence of Stress on the Nuclear Quadrupole Resonance Signal: Modeling, Experiments and Potential Applications as a Strain Gauge
International Conference on Advanced Materials Modelling (ICAM), Rennes, Sept. 2016
- [1] S. Yashima, V. Romero, E. Wandersman, C. Frétny, M.K. Chaudhury, A. Chateauminois and A.M. Prevost
Normal contact and friction of rubber with model randomly rough surfaces.
16th International Conference on Deformation, Yield and Fracture of Polymers, Kerkrade, Netherlands, March 2015

Autres conférences

- [3] L. Ciapa, Y. Tran, C. Frétigny, A. Chateauminis and E. Verneuil
Frottement de films minces d'hydrogel : rôle des interactions moléculaires à l'interface
GDR SLAMM, Paris, 30-31 mai 2022

- [2] L. Ciapa, A. Chateauminis, Y. Tran, E. Verneuil
Transient frictional response of thin hydrogel films: the role of poroelasticity"
17^{èmes} Journées de la Matière Condensée (JMC17), Rennes, Août 2021Aug. 2021

- [1] V. Fazio, V. Acito, C. Frétigny and A. Chateauminis
Frottement instationnaire d'élastomères sus trajectoires curvilignes : le rôle des effets mémoire
17^{èmes} Journées de la Matière Condensée (JMC17), Rennes, Août 2021