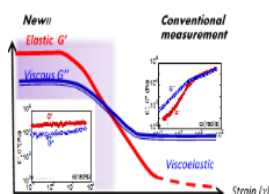


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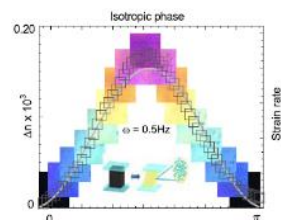
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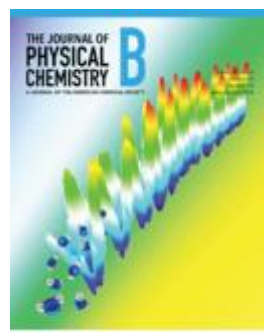


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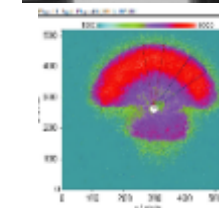
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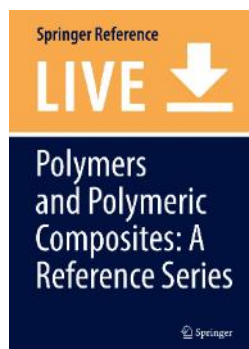
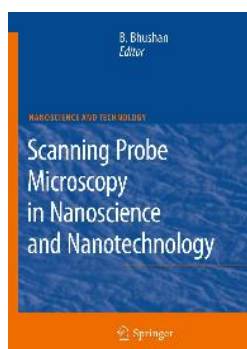
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170. The Effect of CO₂/EO Head Groups on the Solubilization of Oils of Different Polarity in Aqueous Solutions of Nonionic Surfactants, Rahel M. N. Marschall, Vivian J. Spiering, Albert Prause, Jana Lutzki, Laurence Noirez, Sylvain Prevost, Michael Gradzielski, soumis .

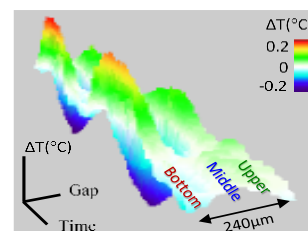
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Polymers and Polymeric Composites: A Reference Series, S. Palsule (Editor), DOI 10.1007/978-3-642-37179-0_54-2

Recent Highlights: on en parle à la Direction Fondamentale de la Recherche du CEA:

- **Highlight 1:** Communiqué du service de la Matière Condensée du 20/08/2021 sur la publication de E. Kume, P. Baroni et L. Noirez, "Strain-induced violation of temperature uniformity in mesoscale liquids" dans Sci Rep **10**, 13340 (2020):



https://iramis.cea.fr/spec/Phoce/Vie_des_labos/Ast/ast.php?t=fait_marquant&id_ast=3259

- **Highlight 2:** Communiqué de la Direction Fondamentale de la Recherche (DRF):

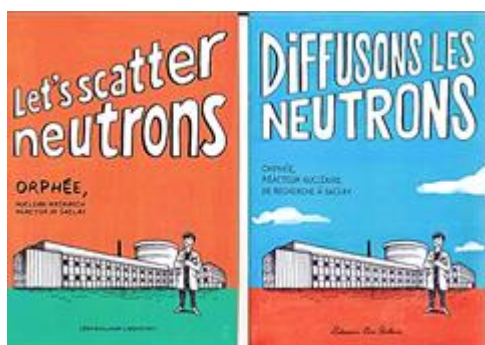
Observation expérimentale d'un effet thermoélastique dans l'état liquide:

https://www-llb.cea.fr/Phocea/Vie_des_labos/Ast/ast.php?t=fait_marquant&id_ast=3291

La thermoélasticité décrit la variation des propriétés élastiques d'un corps solide en fonction de sa température. Pour un fluide incompressible, les coefficients thermoélastiques, dilatation isobare et compressibilité isotherme, sont en pratique nuls. Pour être non nuls, il est nécessaire que des interactions à longue portée soient présentes, mais ceci est a priori exclu de par la définition même de l'état liquide. Une équipe du LLB vient cependant de mettre en évidence des propriétés thermoélastiques pour un liquide dans des conditions usuelles de pression. Ils observent qu'un liquide ordinaire présente une modulation de température sous l'application d'une contrainte mécanique de cisaillement à basse fréquence (~ 1 Hz) le liquide se divise en bandes thermiques chaudes et froides, de plusieurs dixièmes de microns de large et variant de manière synchrone avec la déformation. Ce couplage thermomécanique ainsi mis en évidence est une preuve que l'énergie de l'onde de cisaillement n'est pas dissipée par le liquide mais se propage à l'échelle mésoscopique.

- **Highlight 3:** Communiqué dans les "Brèves de l'Iramis": Mise en évidence d'une relaxation thermo-mécanique dans un liquide après cisaillement, E. Kume & L. Noirez, Brèves de l'Iramis n°307 (May 2021).

Scientific Comics



Participation à l'élaboration de la première bande dessinée « Diffuser les neutrons » en 2018 et version anglaise « Let's scatter neutrons » en 2019, pour illustrer le quotidien des chercheurs et techniciens autour du Grand Instrument Orphée du LLB – conception : A. Bordenave (dessinatrice) et I. Mirebeau (LLB).

(<https://fr.calameo.com/read/005680666c17f80b4dda1>).