

Séminaire



Mardi 16 novembre 2021 à 10h30
Amphithéâtre Henri Benoît et visio

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Objects interacting with solidification fronts: from materials science to geophysics and biology

The interaction of objects with a moving solidification front is a common feature of many industrial and natural processes such as metal processing, the growth of single-crystals for photovoltaics and microelectronics, the cryo-preservation of cells, the formation of sea ice, or the preparation of frozen food. I will discuss our journey from ice-templating to cryopreservation, and discuss how the recent developments in the lab with cryoconfocal microscopy may help us make progresses in these domains and revisit some of these old but still relevant problems.

Recent references:

Dedovets, D., Monteux, C. & Deville, S. Five-dimensional imaging of freezing emulsions with solute effects. *Science*. 360, 303–306 (2018)

Tyagi, S., Monteux, C. & Deville, S. Multiple objects interacting with a solidification front. *Sci. Rep.* [11, 3513 \(2021\)](#)

Ginot, F., Lenavetier, T., Dedovets, D. & Deville, S. Solute strongly impacts freezing under confinement. *Appl. Phys. Lett.* [116, 253701 \(2020\)](#)-

Qin, K. et al. Unveiling cells' local environment during cryopreservation by correlative in situ spatial and thermal analyses. *J. Phys. Chem. Lett.* (2020)

Les personnes souhaitant rencontrer S. Deville sont priées de prendre contact avec Laure Biniak.