

# Cellular materials: from liquid foams to epithelial tissues.

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Foams are cellular patterns with properties at the intersection of several scientific disciplines: statistical mechanics, topology, differential geometry, physico-chemistry, non-newtonian fluid mechanics. In an introduction to these fascinating objects, we will explain why their physics involves 9 decades of space (nm-m) and 9 decades of time (ms-week).

This requires multi-scale modelling and experimental tools ranging from the bench to the synchrotron. We will present recent results which suggest that foams can even act as a model systems to investigate the mixed solid and liquid behaviour of complex materials, the self-similar grain growth in metallurgy, and the development of biological tissues.

