ECFP

Skin and Hair Research

The Edinburgh Complex Fluids Partnership has capability in characterising and understanding the interactions of products with hair and skin

Context

ECFP's soft matter and biological physics researchers use complimentary techniques for physicochemical characterisation of skin and hair properties and to understand their interaction with external agents such as personal care products and bacteria. We are also active in developing novel methods for measuring sensory properties and performance.

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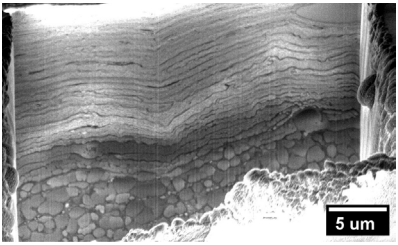
Skin and hair characterisation

ECFP have a suite a capabilities for characterising skin and hair properties, including:

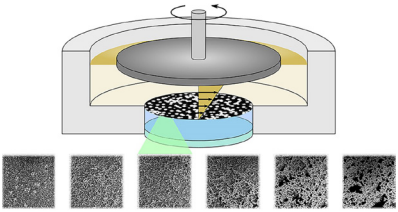
- Contact angle measurements to determine surface wettability
- Cryo focussed ion beam (FIB) scanning electron microscopy (SEM) to visualise structure
- Atomic force microscopy to study surface roughness and mechanical properties
- Transepidermal water loss to understand skin barrier integrity



Cryo FIB SEM of bulk skin flash frozen in liquid nitrogen

Contactless interfacial rheology

We have developed a novel technique to probe interfacial rheology, without the need for a mechanical tool in contact with the interface. This technique can be used to better understand stabilisation mechanisms in many topical formulations which include water and oil phases.[1]



Ed-SKIN

We are part of the ED-SKIN – a network bringing together Edinburgh-based researchers interested in skin research to facilitate knowledge exchange and interdisciplinary collaborations.

1) https://pubs.aip.org/sor/jor/article/67/1/67/2870305/Contactless-interfacial-rheology-Probing-shear-at. "J. Rheol. 67, 67–80 (2023)"

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