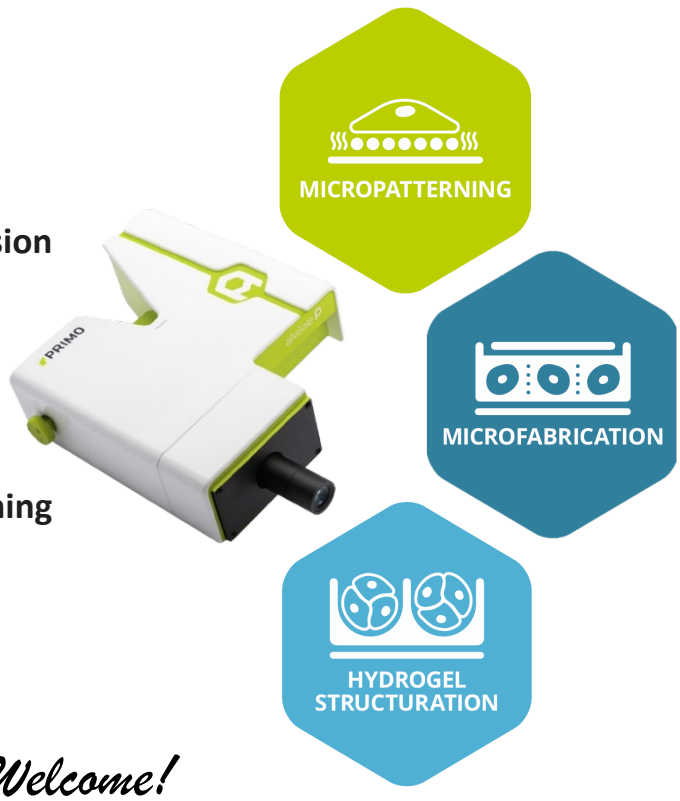
中央研究院物理研究所
INSTITUTE OF PHYSICS, ACADEMIA SINICA

PRIMO: Create Smarter Cell Culture Model

In vivo, the cellular microenvironment plays a crucial role in regulating cell behavior, including differentiation, proliferation, and migration. One of the challenges confronting cell biologists is to mimic this microenvironment in vitro in order to more efficiently study living cells and model diseases. To better mimic this complex milieu in vitro for enhanced cell studies, we present the PRIMO device developed by ALVEOLE. This contactless and maskless UV projection system, based on LIMAP technology, enables precise control over both the biochemical and mechanical properties of in vitro environments. We will first show that PRIMO is a suitable tool to print biomolecules on many substrates including glass, plastic, soft/stiff substrates, textured surfaces, EM grids etc. (Micropatterning). Then, we will present how the projected UV light can be used in order to structure photosensitive resists (such as SU8) and create molds onto which elastomeric solutions can be polymerized (Microfabrication). Finally, we will show how PRIMO provides an efficient means to produce hydrogel structures with precise dimensions and shapes to tailor complex 3D cell culture templates (Structuration and decoration of hydrogels).

Speaker: Shubham Sahu, PhD
Alvéole, France



(Open to everyone) **Presentation & Discussion**
January 28, 2026, 15:00
Venue: 1F, P101 Meeting Room,
Institute of Physics, Academia Sinica

(Selected participants only) **Hands-on Training**
January 29 to 31, 2026
Register via QR code or
https://forms.gle/PuY14UKexhGZE8dp7

All are Welcome!

PRIMO

Event contact person:
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