

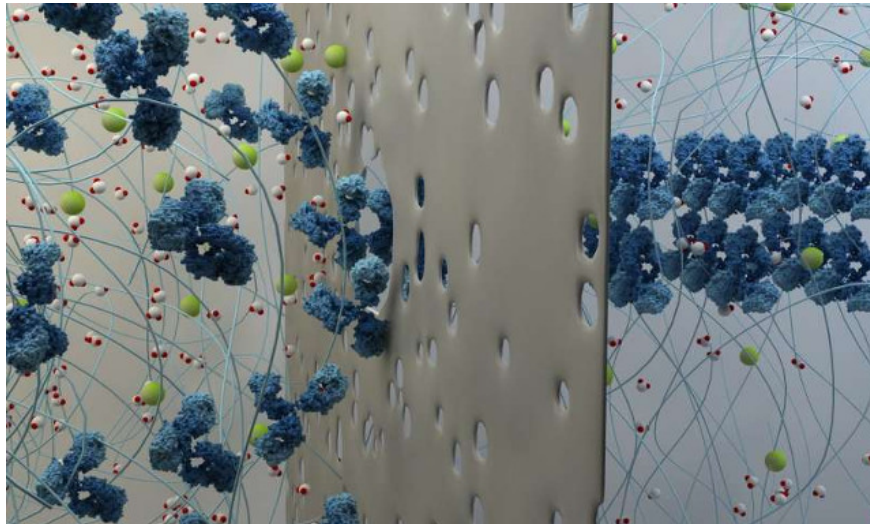
New molecular printing technology can reproduce a complex chemical environment similar to the human body

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'3DEAL' is a simple and inexpensive fabrication technique that can create complex molecular tissue in soft materials, such as hydrogel, with microscopic resolution and deep to centimeter units.

This capability allows the creation of 3-D hydrogel environments with chemical composition space control, opening the opportunity to reconstruct biological scenarios such as 3-D gradients or models. This can be used to design new drug testing platforms or build complex tissue design structures.



The study has been published in the Journal of Advanced Functional Materials.

The head of Professor Alvaro Mata, from Queen Mary's School of Engineering and Materials Science, said: *"The human body consists mainly of anisotropic, hierarchical, and mostly three-dimensional structures. Such structures will have important implications for developing more effective drugs or can design clearer and more precise tissue and functional structures ."*

The 3DEAL's key design feature is the use of porous electric fields and masks, which can be used to move and concretize many types of molecules in hydrogels with microscopic resolution.

Gastón Primo, Ph.D. Students of Queen Mary and co-author of the article said: *"The main benefit of this technique is its durability and efficiency as well as cost savings and can be used with available hydrogels and prototyping with different types of molecules "* .

Dietmar Hutmacher, a medical science and technology specialist, from Queensland University of Technology, talks about the study: *"Making biometrics hydrogels and anisotropic structures attracted a great deal of interest Scientific fellow with this innovative 3DEAL technology "* .

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