BIOLEV

SELF TRANSFORMATION

Northwestern researchers have developed soft materials that autonomously self-assemble into molecular superstructures and remarkably disassemble on demand. Changing the properties of materials opens the door for novel materials in applications ranging from sensors and robotics to new drug delivery systems and tools for tissue regeneration.

For example, the highly dynamic materials form hydrogels, and provide unexpected biological clues about the brain micro-environment after injury or disease, when their superstructures reveal reversible phenotypes in brain cells characteristic of injured or healthy brain tissue.

The study's co-corresponding authors are Samuel Stupp, director of the Simpson Querrey Institute and the Board of Trustees Professor of Materials Science and Engineering, Chemistry, Medicine, and Biomedical Engineering, and Erik Luijten, Professor and Chair of Materials Science and Engineering and Engineering Sciences and Applied Mathematics.

Image by Ming Han and Erik Luijten