



Showcasing research from Dr Chandan Maity's (Organic) Material Science and Engineering Laboratory, Centre of Nanobiotechnology, Vellore Institute of Technology, Vellore Campus, Tamil Nadu, India.

A light responsive single amino acid-based supramolecular hydrogel for photo-controlled vitamin release

This work introduces a light-responsive, low-molecular-weight hydrogelator (FmocY-Azo) as a versatile platform for controlled therapeutic delivery. Derived from tyrosine and incorporating an azobenzene photoswitch, FmocY-Azo self-assembles under ambient conditions into a supramolecular fibrous hydrogel. The material exhibits thixotropy and dual thermal-photo responsiveness. The material effectively encapsulates vitamin B₁₂ and enables on-demand release upon light irradiation *via* photoinduced network restructuring. Release follows Korsmeyer–Peppas kinetics under light and zero-order behaviour in the dark, highlighting its potential for precise, light-triggered therapeutic delivery.

Image reproduced by permission of Divya Chauhan and Chandan Maity from *Mater. Adv.*, 2026, **7**, 175.

As featured in:



See Divya Chauhan and Chandan Maity, *Mater. Adv.*, 2026, **7**, 175.