

### Composite preparation from organic-inorganic emulsion

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Normal materials easily get detached from the stretchable surfaces of moving things such as human's body because they become thinner in perpendicular when stretched. Auxetic materials may solve this problem, and this study aims to make auxetic composite materials that are vertically aligned. The materials are fabricated with nanoclay and PDMS (poly(dimethylsiloxane)) using DMC (Directional Melt Crystallization) technique. They were checked if the Poisson ratio becomes 0 by incorporating nanoclays into PDMS, which are elastic and viscoelastic, respectively. The DMC technique is an experiment method that creates an aligned structure by growing solvent crystals in a vertical direction by a temperature gradient. By using the DMC technique, a composite was prepared from the emulsion which is prepared with nanoclay and PDMS uncured resin. Pores were successfully introduced too by removing the solvent crystals, resulting in nanoclay/PDMS foams.