

Hydrogel coating of α -Al₂O₃ microplates using the spreading phenomenon between the three immiscible fluids

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Organic coating of functional fine particles is exploited for various purposes such as the protection of core particles, modification of the surface properties, and compatibilization of the particles with the matrix material[[○]1]. To date, numerous chemical and physical methods have been introduced to coat the micro- and nano-sized particles with organic matters including small molecular weight ligands and polymers, yet the coating with a hydrogel-type matter has been rarely reported. Herein, a facile method is demonstrated for coating metal oxide particles with a crosslinked PEG hydrogel layer based on the spreading phenomenon of two different fluids on the colloidal oxide surfaces immersed in another immiscible continuous phase fluid.