



Engineered Calcium Silicate Hydrates for Application

Project Aims

The overarching aim of ERICA is to understand how to engineer hydrates at the nanoscale, to enable improved engineering applications, and to train a cohort of 13 materials scientists who will be able to carry these research advances in future employment.

Inorganic hydrates such as calcium-silicate-hydrate, $(CaO)_x(SiO_2)(H_2O)_y$, abbreviated C-S-H, are “wonder” materials exceedingly rich in terms of potential applications that can be produced in almost any shape or form, cheaply and in large quantities right across the world from local and sustainable resources. C-S-H is the “glue” of cement, itself the glue of concrete, material with enormous economic impact. But C-S-H and other hydrates are also used as a filler in paper and in polymer composites, as dental filling materials, for waste water treatment in fertilizers and as insulation and encasement materials including for nuclear waste.

