

<b>Project</b>	Preparation of coating material of hybrid hydrogel
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<b>Academic Year</b>	2018

### Abstract

This research studied of the preparation of coating material of hybrid hydrogels. The objective was to study the preparation of the coating materials of the hydrogel and hybrid hydrogels, also, their preparation and coating of mortar cement with the hydrogels. The hydrogels prepared from the polymerization reaction between 2-hydroxyethyl methacrylate, diallyldimethyl ammonium chloride and sodium alginate mixed with Bromothymol blue indicator. In addition, the hybrid hydrogels prepared by the addition of fume silica into the hydrogels.

The results showed that the hydrogel and hybrid hydrogel mixed with bromothymol blue indicator had the color change with acid-base solutions. Factors effecting the color depth and lightness of color were type of acid-base solutions, sodium alginate and fume silica. The water absorption property of hydrogel and hybrid hydrogels depended on sodium alginate and fume silica in the hydrogels. In addition, the coupling agent had an effect on the adhesion between the hydrogel, hybrid hydrogel and mortar cement.

**Keywords:** hydrogel, hybrid hydrogel, fume silica, mortar cement, coupling agent