

## Photo initiating system to synthesize an absorbent hydrogel

**Assist. Prof. Dr. Amr Allam**

Assistant professor of textile dyeing and finishing technology- faculty of Applied Arts,  
Helwan University

**Dr. Shaimaa A. Kamel**

The higher institute of Applied Arts –fifth settlement – New Cairo Academy

[malak\\_ahmed06@yahoo.com](mailto:malak_ahmed06@yahoo.com)

### Abstract

In order to synthesis absorbent hydrogel, Carboxymethyl cellulose (CMC) was prepared by different DS.

A superabsorbent hydrogel of carboxymethylcellulose (CMC) was initiated by UV system using methylenebisacrylamide (MBA) as a crosslinking agent and Photo initiator.

For investigation the reaction of water absorbency of the hydrogels, the synthetic conditions were systematically optimized through studying the influential factors.

The maximum water absorbency was achieved under the optimum condition of poly CMC that found to be CMC (DS 0.76) / 10 g, MBA =0.5 gm, PI = 0.08 g, L.R 1:10, temp. 30<sup>0</sup> C and time 3 h.

**Key words:** Carboxymethylation, hydrogel, cross linking, photo initiation UV and swelling