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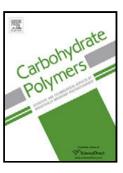
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ACCEPTED MANUSCRIPT

Preparation and Properties of Organic-Inorganic Composite
Superabsorbent Based on Xanthan Gum and Loess
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ABSTRACT: a new, low-cost, and eco-friendly organic-inorganic composite
superabsorbent was successfully synthesized in aqueous solution by polymerization
xanthan gum (XG), neutralized acrylic acid (AA) and loess using ammonium persulfate
(APS) as initiator and N,N-methylenebisacrylamide (MBA) as crosslinker. Structure
and morphological characterizations of the composite superabsorbent were
investigated by Fourier-transform infrared spectroscopy (FTIR) and scanning electron
microscopy (SEM). The loess content, pH values, surfactants, salts and temperature
which could affect the swelling and water-retention capabilities of the composite
superabsorbent were investigated. The composite superabsorbent exhibits excellent
water absorbency (610 g/g in distilled water), pH-stability (pH 5-10), and higher
swelling capacity in anionic surfactant solution, on the other hand, the composite
superabsorbent can be used for removing multivalent metal ions.
Keywords: xanthan gum; loess; composite superabsorbent; water absorbency;
swelling-deswelling
1. Introduction

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