

عنوان مقاله:

Synthesize and functionalize of the novel SiO₂/APTES derivatives for applications in enzyme stabilization

محل انتشار:

بیستمین کنگره شیمی ایران (سال: 1397)

تعداد صفحات اصل مقاله: 1

نویسندگان:

.Fateme Takhti - *Department of chemistry, Graduate University of Advanced Technology, Kerman, Iran*

Elaheh Mosaddegh - *Department of New Materials, Institute of Science and High Technology and Environmental Sciences, Graduate University of Advanced Technology, PO Box ۷۶۳۱۵-۱۱۷, Kerman, Iran*

Masoud Torkzadeh-Mahani - *Department of Biotechnology, Institute of Science and High Technology and Environmental Sciences, Graduate University of Advanced Technology, PO Box ۷۶۳۱۵-۱۱۷, Kerman, Iran*

خلاصه مقاله:

Enzymes are large and fragile protein molecules that catalyze chemical reactions, so over the years, scientists and engineers have found it more difficult to immobilize enzyme catalysts on easily separable supports for use and re-use in a variety of technologies such as industry, medicine, and biotechnology [1]. The need to overcome these so as to take advantage of enzyme activity and specificity and other attractive aspects of enzyme technology has been a major incentive in development of the new biochemistry based on immobilization procedures. Silica-based porous materials, because of their high surface area and tunable pore diameter, are regarded as suitable hosts for large molecules such as proteins [2]. In this regard, the synthesis of a novel nanostabilizer based on mesoporous nano silica was reported herein (Fig 1). At the first, SiO₂ nanoparticiles were synthesized and then composite by 3-aminopropyl triethoxysilane. The synthesized silica composite was functionalized using glutaraldehyde and ethylene diamine and was stabilized using chitosan biopolymer. The synthesized nanocomposite has shown well application in enzyme Uricase stabilization and immobilization.

کلمات کلیدی:

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