

عنوان مقاله:

Michael Addition Reactions in Dyeing of Protein Fibers with Quercetin

محل انتشار:

بیست و ششمین سمینار شیمی آلی ایران (سال: 1397)

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خلاصه مقاله:

The Michael reaction typically refers to the base catalyzed addition of a nucleophile (Michael donor) to an activated α,β -unsaturated carbonyl-containing compound (Michael acceptor). Base catalysts are often unnecessary in the case of amines, because of the strong nucleophilicity of the nitrogen atom, whereas weak bases aid in deprotonation of thiols [1]. Laccases are able to initiate nucleophilic amination of poly phenolic compounds with primary aromatic amines, resulting in the formation of the corresponding mono-aminated and di-aminated quinones [2]. The enzyme-generated quinones could react with proteins fibers [3]. Natural colorants are composed of polyphenolic compounds, so, they are good substrates for laccase to be converted to related quinones. Quercetin, a plant flavonoid from the flavonoid group of polyphenols, is found in many fruits, vegetables and leaves. In this study a new idea was studied for making a covalent bond between quinones formed by laccase from quercetin, as a natural dye, and nucleophilic side chains. (Fig. 1). FTIR results and dye fixation measurements show the possibility of using this method to obtain colored wool with high wash fastness.

کلمات کلیدی:

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