

TRANSCRIPTION OF SELF-ASSEMBLED GEL NETWORKS EMBEDDED WITH REACTIVE VINYL GROUPS TO NANOSTRUCTURED POLYMERS

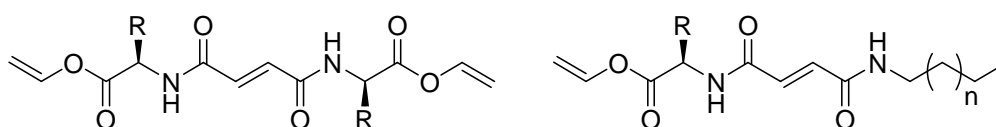
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A recent study in a field of supramolecular gels resulted in the development of recognizable areas in materials chemistry with an emphasis on the self-organizing soft materials. They have a great opportunity for specific applications in various fields, such as the chemistry of materials, pharmaceutical, food cosmetic industry or in tissue engineering and regenerative medicine.[1] Polymerization can improve the mechanical properties of supramolecular gels, or prepared the specific polymer materials.[2] In order to achieve the "solid-state" reaction within the gel network, is necessary to meet the special requirements of the self-association of gelators molecules. This especially refers to the distance and position of functional groups. Our attention was focused on the phenomenon of self-association in gels.[3] The Leu, Val, Phe and Phg fumaramides derivatives shown on figure were synthesized and characterized.



R = *i*-Bu, *i*-Pr, Bz and Ph; n = 7 - 11

By the process of self-association, these compounds can form gels with various organic solvents and water and solvent mixtures. When irradiated, some gel networks polymerize. The polymerization (covalent crosslinking) was induced by photo and gamma radiation. We have shown that small changes in the structure of compound cause specific self-association through non-covalent interactions which effects on the reactivity of crosslinked molecules. Gelators with two polymerized functional groups experienced a successful "solid-state" reactions without compromising the morphology of the initial gel network.

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