

Investigations on the dynamics under the self-assembly and stimuli-responsive processes of self-healing hydrogel by SAXS

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Abstract:

In recent years, self-healing hydrogel has become one of the potential materials in the biomedical field because of their damage-repairing ability similar to the human body self-repairing behavior.

Various nanocomposites or stimuli-responsive factors have been successfully introduced or found in these materials, but the mechanisms of nanoscale interaction, environmentally responsive behaviors, and gelling evolution have not been clearly confirmed yet. As an important exploration technique for soft materials, small-angle X-ray scattering is employed to detect nano-structural changes due to the self-assembly process and stimuli-responsive process in self-healing hydrogels. Along with the deeper investigation of this "smart material", the more advanced biomimetic applications will be developed in the no long future.