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Synthesis of Novel Acetal-Based Formaldehyde-Free Crosslinkers

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Binders are cross linkable polymer lattices which are used to bond fibers in textile and nonwovens. They provide to the fabric properties such as strength, flexibility, durability, resistance to washing and provide adhesion to fiber. N-Methylol acrylamide is one of the most commonly used cross linker in binder composition since it has good chemical and physical properties and self-cross linking ability. However, it emits formaldehyde to the environment during the cross linking reaction as a side product. Formaldehyde is known as a human carcinogen compound and is harmful to the human and the environment.

In this study, a novel cross linker is synthesized by the reaction of pentaerythritol with 3,4-Dihydro-2H-pyran under acidic conditions. Tetra- and tri- functional products will be used to crosslink cellulosicor amine containing polymer chains and their cross linking ability in different conditions and swelling ratios will be investigated.

Biography:

Sule Nihal Oz is a graduate student in Chemistry Department at Bogazici University, Turkey and holds a BSc Degree (2015) in chemistry at Bogazici University. She worked as research student in Organic Synthesis & Polymer Chemistry Laboratory during her undergraduate study. She is currently working on organic synthesis, purification and analysis of organic products for her master thesis.