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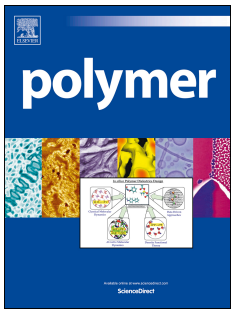

Thermo-switchable pressure-sensitive adhesives with strong tunable adhesion towards substrate surfaces of different hydrophilicity

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Thermo-switchable pressure-sensitive adhesives with strong tunable adhesion towards substrate surfaces of different hydrophilicity

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Abstract: Short-chain oligomeric poly(ethylene glycols), PEGs, are capable of forming supramolecular hydrogen-bonded stoichiometric network complexes with stimuli-responsive polymer such as N-substituted high molecular weight polyamide, poly(N-isopropyl acrylamide), PNIPAM, demonstrating Lower Critical Solution Temperature (LCST) in aqueous solutions. H-bonding occurs through interaction of PEG terminal hydroxyl groups with complementary amide groups in the PNIPAM monomer units. The complexes combine high cohesive strength (due to H-bond crosslinking of long-chain macromolecules) with large free volume (resulting from telechelic structure and essential length of PEG