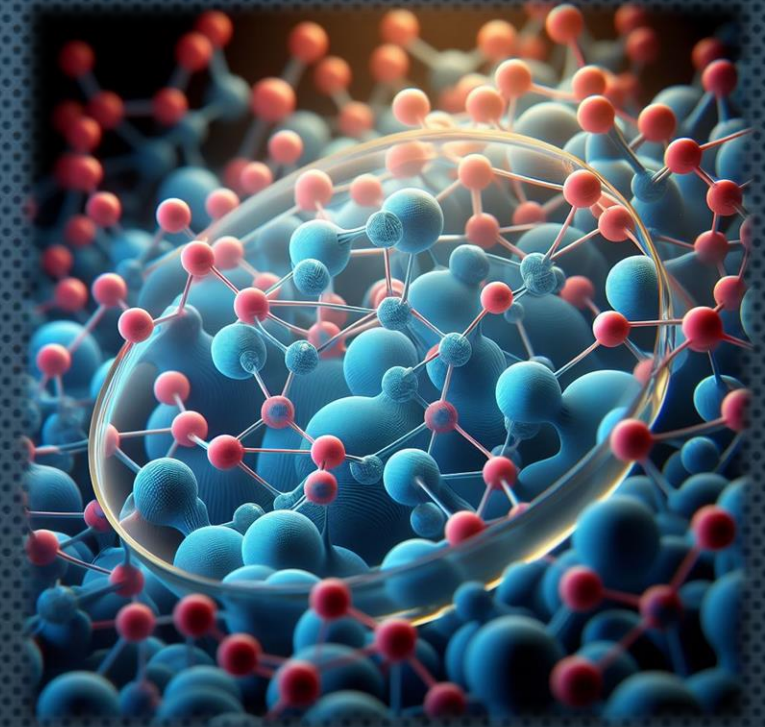


پژوهشکده علوم و فناوری های همگرا تقدیم می کند:



## SMART MATERIALS: PHOTORESPONSIVE POLYMERS IN STIMULI-RESPONSIVE DEVICES



سخنران: آقای دکتر علیرضا مهدویان  
هیات علمی پژوهشگاه پلیمر و پتروشیمی

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مکان سالن سمینار پژوهشکده علوم و فناوری همگرا  
اتاق مجازی هیبریدی: [HTTPS://VC.SHARIF.EDU/CH/ICST](https://vc.sharif.edu/ch/icst)

Recent years have witnessed tremendous progress and development of photoswitchable polymers, owing to distinctive and particular physicochemical properties of their isomers upon a variety of triggers, and specially light illumination. Light is a fascinating and green stimulus, because of its remote control, micron- or submicron-size focusing area with controllable wavelength and energy, non-invasiveness and non-destructive nature, precisely controlled direction, and availability. Here, the most recent observations and efforts in the progress of photoswitchable materials (specifically spiropyran-based) and their applications as sensors for heavy metal cations and anions, pH, acid and base vapors, wettability and humidity are presented. Other applications include data recording and anticounterfeiting devices, photorheological fluids, optically reversible switching membranes, photoregulating surface plasmon resonance, photomodulation of ion conductivity and mechanoresponsive polymers. The bio-base field is another interesting subject that is discussed here and consists of reversible cell sheet engineering, photodynamic therapy, switchable fluorescence labeling, controlled drug delivery and biological ion channels.