



## Synthesis of organic-inorganic hybrid azobenzene materials for the preparation of nanofibers by electrospinning'

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Titre	Synthesis of organic-inorganic hybrid azobenzene materials for the preparation of nanofibers by electrospinning'
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Auteur	Bučko, Aleksandra [1], Zielinska, Sonia [2], Ortyl, Ewelina [3], Larkowska, Maria [4], Barille, Régis [5]
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Résumé en anglais	<p>The new photochromic hybrid materials containing different mole fractions of highly photoactive 4-[(E)-[4-[ethyl(2-hydroxyethyl)amino]phenyl]azo]-N-(4-methylpyrimidin-2-yl)benzenesulfonamide (SMERe) were prepared by a low temperature sol-gel process. The guest-host systems with triethoxyphenylsilane matrix were obtained. These materials were used to form thin transparent films by a spin-coating technique. Then the ability of thin hybrid films to reversible trans-cis photoisomerization under illumination was investigated using ellipsometry and UV-Vis spectroscopy. The reversible changes of refractive index of the films under illumination were in the range of 0.005-0.056. The maximum absorption of these materials was located at 462-486 nm. Moreover, the organic-inorganic azobenzene materials were used to form nanofibers by electrospinning using various parameters of the process. The microstructure of electrospun fibers depended on sols properties (e.g. concentration and viscosity of the sols) and process conditions (e.g. the applied voltage, temperature or type of the collector) at ambient conditions. The morphology of obtained nanofibers was analyzed by an optical microscopy and scanning electron microscopy. In most instances, the beadless fibers were obtained. The wettability of the surface of electrospun fibers deposited on glass substrates was investigated.</p>
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### Liens

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