

## PHOTOCHEMICALLY ACTIVE ALKYL BROMIDES AS INITIATORS IN PHOTO-ATRP

Mária Gurská<sup>a</sup>, Anita Andicsová-Eckstein<sup>a</sup>, and Jaroslav Mosnáček<sup>a,b</sup>

<sup>a</sup>Polymer Institute SAS, Dúbravská cesta 9, 84541 Bratislava, Slovakia

<sup>b</sup>CEMEA SAS, Dúbravská cesta 9, 84511 Bratislava, Slovakia

In recent times, photoATRP belongs to the group of controlled polymerizations, which require a low concentration of radicals to form a polymer. Polymerization is mediated by light with a wavelength in the UV region or visible light region [1-4]. Here photoactive naphthalene-1,8-dicarboxylic acid mono- (NI) and diimide (NDI) derivatives were designed and used in the form of alkyl bromide initiators. They are supposed to have no or positive effect on the photoATRP process and also provide a more sensitive system for studying the initiation efficiency and viability of photoATRP through combination of GPC and fluorescence spectroscopy. In the case of light absorption used in photoATRP, the photoactive initiator increases the initiation efficiency due to the absorption of light and its conversion to energy in the initiation stage of polymerization. The synthesis of NI and NDI initiators consists of two steps. The first step is the conversion of naphthalene mono- resp. dianhydride to naphthalene mono- resp. diimide with free OH groups. Subsequently, in the second step, an ester bond was formed with the corresponding carboxylic acids or their derivatives. The prepared initiators were characterized and for the first time applied in photoATRP in the polymerization of methyl acrylate and butyl acrylate in various solvents in the presence of air. The living end of the polymer was also demonstrated using the prepared short oligomers as macroinitiators.

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