



Second-harmonic generation in poled polymers: pre-poling history paradigm

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Résumé en anglais	Experimental studies of second harmonic generation (SHG) from electric-field poled PMMA - DR1 system show occurrence of a maximum in diagonal and off diagonal tensor components $\chi^{(2)}(-2\omega; \omega, \omega)$ at 15 mol % concentration and a rapid decrease above, with a stabilization. The origin of the observed concentration dependence is studied using the Monte Carlo (MC) modeling. We find that presence of maximum is conditioned by the pre-poling history of the sample, when entanglement of linear dipolar structures takes place. Length of the pre-poling interval is an important kinetic parameter which differentiates between various non-exponential kinetics of build-up of polar phase responsible for strong/weak SHG susceptibility.
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