PICOSECOND HEAT TRANSPORT THROUGH MOLECULAR LAYERS

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Heat transport through interfaces and molecular layers with a gold-monolayer system was studied with SFG spectroscopy. Picosecond laser pulse was applied to a gold thin layer to create a temperature jump from 400-500K; the response to the temperature jump of a Self-Assembled Monolayer on the gold surface was monitored with SFG. Different chain length alkanethiols were used to vary the thickness of the monolayer. Vibrational response functions for different chain length alkanethiols were obtained from the SFG spectra. A chain length dependence for the rise times was observed and possible mechanism was discussed.

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