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Determination of the hyperpolarizability components of hemicyanine dyes by measuring the anisotropic fluorescence and second harmonic of the dyes uniformly aligned within zeolite channels DOSEOK KIM, Department of Physics and Interdisciplinary Program of Integrated Biotechnology, Sogang University, TAEKYU SHIM, Department of Physics, Sogang University, MYOUNGHEE LEE, Department of Chemistry, Sogang University, BUMKU RHEE, HYEONSIK CHEONG, Department of Physics, Sogang University, HYUNSUNG KIM, KYUNGBYUNG YOON, Department of Chemistry, Sogang University — Unidirectional ensemble of hemicyanine molecules was prepared by inserting the molecules into the vertical channels of a uniformly-oriented zeolite (silicalite-1) film grown on a glass substrate. Fluorescence from this sample excited with light polarized along the vertical channel was 50 times larger than that excited with light polarized orthogonal to the vertical channel direction. This vertically aligned hemicyanine dyes were used to determine the ratio of the molecular hyperpolarizability components β_{zxx}/β_{zzz} of hemicyanine.

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