SPECTRAL MANIFESTATIONS OF THE OPTICAL "COOLING" OF ELECTRONIC EXCITED DYE MOLECULES ADSORBED ON POROUS SILICATE GLASS BY ANTI-STOKE'S EXCITATION

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The alterations of electronic spectra and their parameters for diverse adsorbed dye molecules excited with the light quanta of varying energy were experimentally studied. It has been revealed that in some cases the decrease of exciting quanta's energy down to anti-Stoke's values generates electronic excited adsorbed molecules having a lack of vibrational excitation. Moreover this vibrational nonequilibrium appears to remain long enough and to manifest itself through electronic spectra. Discovered phenomena may be explained by the very low efficiency of vibrational energy exchange between weak-bonded physically adsorbed dye molecules and the surface of dielectric. Diverse factors of this peculiarity of the interaction for dye molecules with the surface are examined.

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