

**Polarized photoacoustic spectra of green bacteria cells**

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The green bacteria *Prosthecochloris aestuarii* cells and cell fragments were embedded in isotropic and stretched polyvinyl alcohol films. The samples with great amount of oligomeric bacteriochlorophyll *c* as well as with disaggregated oligomers were investigated. The photoacoustic spectra were measured at the directions of electric vector of actinic light changed at every 30 deg from 0 deg till 180 deg with respect to some direction in a film plane. The average mutual angle between transition moments of monomeric and oligomeric bacteriochlorophyll *c* was established from the dependence of photoacoustic signal amplitude on the direction of light polarization. Also, the angles between average direction of carotenoid transition moments and transition moments of bacteriochlorophylls were evaluated. The angle between monomeric bacteriochlorophyll *c* in the samples without oligomers was about 30 deg, whereas in the sample containing oligomers about 60 deg. Film stretching as well as cell fragmentation change the pigment transition moments directions, therefore predominantly the unstretched samples with whole green bacteria cells were investigated. The polarized absorption and fluorescence spectra were also measured.