LASER INDUCED FLUORESCENCE OF PHTHALOCYANINE IN HYDROGEN DROPLETS

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Droplets of hydrogen molecules were generated by the same method as that of He droplets. Hydrogen droplets thus produced consist of about $10^5$ molecules with a temperature of about 4 K. We found that hydrogen droplets pick up phthalocyanine molecules in a pickup chamber like He droplets. Laser induced fluorescence spectra of phthalocyanine molecules captured by hydrogen droplets showed spectra similar to those observed for phthalocyanine-$(H_2)_{N}$ clusters embedded in He droplets with $N > 1000$, but the spectrum in hydrogen droplets showed sharper linewidth than that of phthalocyanine-$(H_2)_{N}$ in He droplets. In addition, a clear dependence in the linewidth on the ortho-to-para concentration ratio was observed. We will discuss details of the observed spectra.

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