DOPED HELIUM CRYSTALS - THE PROMISES FOR MATRIX-ISOLATION SPECTROSCOPY

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The novel universal technique for impurities embedding directly into solid He we recently elaborated [a] allows to acheive the guest particles concentrations as high as 10^{19} cm^{-3} (as small clusters suspended in a solid) and about 10^{16} cm^{-3} (as solitary isolated molecules or atoms) under a sample growth rate up to 3 mm per minute. Contrary to the liquid He droplets technique we can investigate the temperature and pressure dependecies, whereas the procedure of a sample preparation and replacement is more simple than for matrix-isolation by p-H_2. The promises for spectroscopic applications of the new matrix and the first experimental results will be discussed .

[a] E. B. Gordon, G. Frossati, A. Usenko. *Phys. Rev. Lett.*(submitted)