**Comparison of Stimulated Brillouin Scattering from Pure Acetone and colloidal Ag-Nanoparticles**

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Stimulated light scattering (in liquids) is one of the major significance research subject in quantum electronics and nonlinear optics. Stimulated Brillouin scattering (SBS) is well known for its excellent performance in phase conjugation to compensate the wave front distortion and phase restoration, and also provide some useful techniques for laser pulse compression up to hundreds of picoseconds. G. S. He et.al. have reported a new type of stimulated scattering which is called stimulated Mie-Bragg scattering (SMBS). The newly observed effect appears the features of no frequency shift and it is an important research topic in the light scattering. In this work, the backward SBS pulse from pure acetone cell is investigated experimentally. Presence of the nanoparticles in the scattering medium can change the Brillouin scattering response of the medium .So the effect of colloidal Ag-nanoparticles in acetone cell on the backward SBS energy and temporal pulse evolution were measured and compared with pure one. The stimulated scattering cell (about 360 mm) pumped by a single longitudinal mode Nd:YAG laser with 1064 nm wavelength and pulse duration of . Results showed that by adding the Ag nanoparticles into the pure acetone, the backward scattering pulse duration decreases and increases the pulse compression compare with the pure acetone. Also, the effect of concentration of nanoparticles on the SBS pulse duration is examined. It has been observed that the Ag nanoparticles in the medium lead to optimize the scattering pulse energy and cause to control the pulse width by changing the concentration of the Ag nanoparticles