

Optical phase conjugate from cerium doped barium titanate at wavelength 632.8 nm

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In this thesis, optical phase conjugate beam with the using of different resonator configurations has been investigate. Two types of SPPC resonators were selected to use, the first one is linear resonators formed by crystal surface and the other one is linear resonators formed by single mirror and a photorefractive crystal. In our experiment, cerium doped barium titanate crystal $3(\text{Ce}:\text{BaTiO})$ and He-Ne laser with wavelength of 632.8 nm have been used. From the results of both cases, the angle of the incident beams is optimum at 37.23 degree and 37.44 degree respect to the normal line of the surface that parallel to the c-axis of the crystal. The generating time of OPC beam are 17 minutes and 15 minutes for the first and second type resonators, respectively. The reflection ratios are equal to 35.37910% and 0.240%for the first and second type resonators, respectively (the second type resonators could provide better reflection ratio).

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