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THE EFFECT OF PULSED LASER ON CRYSTALLIZATION OF ITO ON POLYCARBONATE

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In this experiment first we prepared a solution of ITO and using the sonicator device the solution was dispersed. Then using spin coating and sputtering device ITO was coated on transparent polycarbonate. Thickness of layer was approximately 300 nm and less than 100 nm in the spin coating and sputtering mode respectively. After the coating process the polymers became conductive, considering the critical temperature of polycarbonate annealing process using heat and laser was conducted for crystallizing the ITO and a significant improvement in electrical conductivity was observed. Since polycarbonate can not tolerate high temperature we used nd-YAG pulse laser to overcome this problem. The results show that pulse laser causes relatively good crystallization of ITO on polycarbonate substrate. The conductivity of the laser treated polycarbonate was increased about 100 times and transparency was about 85%.