液晶レンズの光学パワー及び回復時間の厚み依存性

Dependence of Optical Power and Decay Time of LC Lens on Cell Gap

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Liquid crystal (LC) lens has been paid attention for decades. The dependence of power and decay time of an LC lens [1] on the thickness of the LC layer has not been reported. In this work, power and decay time of LC lenses of various cell gaps are measured. Figures 1 (a) and (b) show the maximum optical power in positive and negative lens states, respectively. Optical power increases nearly linearly with the cell gap. Figure 2 (a) and (b) show the decay time of LC lenses with different cell gap. It can be seen that the decay time is nearly proportional to the square of LC layer thickness.

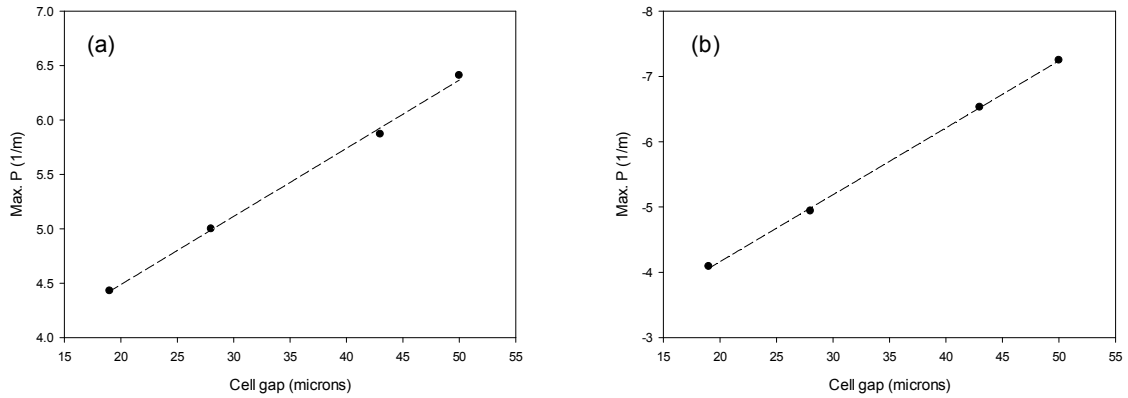

Figure 1. Maximum optical power as a function of cell gap. (a) positive lens and (b) negative lens.

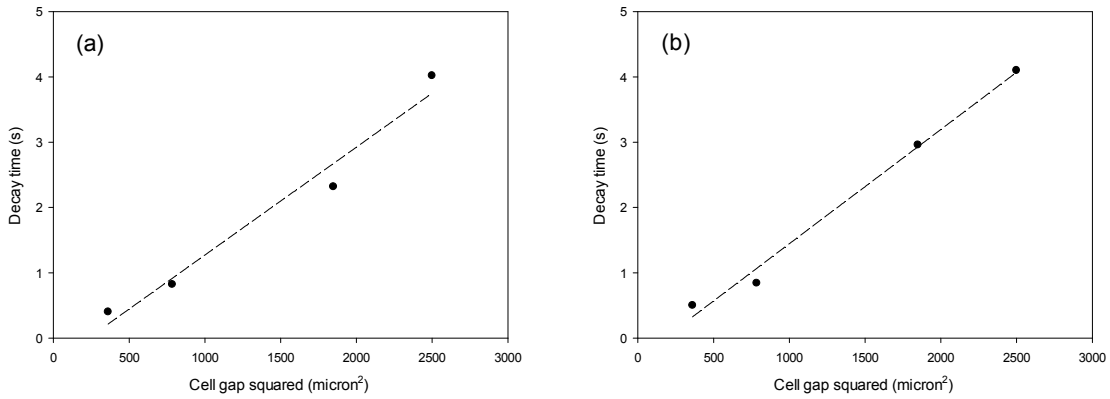

Figure 2. Decay time as a function of square of cell gap. (a) positive lens and (b) negative lens.

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[1] M. Ye, et al, Appl. Opt. **51** (2012) 7630.