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Effects of graphene on in-plane electro-optic switching for a nematic liquid crystal DANIEL KINNAMON, NICOLE SKAGGS, ALFRED GARVEY, RAJRATAN BASU, US Naval Academy — A small quantity of graphene flakes was doped in a nematic liquid crystal (LC), and the in-plane electro-optic switching was found to be significantly faster in the LC+graphene hybrid than that of the pure LC. Additional studies revealed that the presence of graphene reduced the rotational viscosity and the twist elastic constant of the LC, allowing the nematic director to respond faster on switching the electric field on.

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