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Carbon nanotube dispersed liquid crystal: A nano electromechanical system RAJRATAN BASU, GERMANO IANNACCHIONE, Worcester Polytechnic Institute — Electric field induced director orientation of a nematic liquid crystal (LC) + carbon nanotube (CNT) system reveals insights on switching behavior for this anisotropic composite. Once the field goes off, the LC+CNT system relaxes back to the original orientation through a mechanical rotation, revealing the intrinsic dynamics. LC molecules and CNTs cooperatively form local *pseudonematic* domains in the isotropic phase due to strong LC-CNT interactions. These field-responsive anisotropic domains do not relax back to the original orientation on switching of the field off, which could find potential applications in memory devices.

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