Abstract Submitted
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Structure-Function Relationships of Ferroelectric Polymers.[1] ELENI PAVLOPOULOU, JON MAIZ, NICOLETTA SPAMPINATO, LCPO, CNRS/University of Bordeaux/Bordeaux INP, MARIO MAGLIONE, ICMCB, CNRS/University of Bordeaux, GEORGES HADZIIOANNOU, LCPO, CNRS/University of Bordeaux/Bordeaux INP — Poly(vinylidene fluoride), PVDF, and its copolymers with trifluoroethylene, P(VDF-co-TrFE) have been long appreciated for their excellent ferroelectric properties. Although they have been mainly studied in the 80s and 90s, understanding their performance is still lacking. Yet the increasing use of P(VDF-co-TrFE) thin films in organic electronic devices during the last ten years revives the need for apprehending the function of these materials. In this work we investigate the structure of P(VDF-co-TrFE) films and correlate it to their ferroelectric properties. Our results show that ferroelectric performance is solely driven by the fraction of polymer that has been crystallized in the ferroelectric phases of PVDF. The relations between remnant polarization, coercive field and dipole switching rate of P(VDF-co-TrFE) with the ferroelectric crystallinity are demonstrated.

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Eleni Pavlopoulou
LCPO, CNRS/University of Bordeaux/Bordeaux INP

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