

论文

P(VDF-TrEE)铁电薄膜微观铁电压电特性研究

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摘要 借助原子力显微镜优异的空间分辨能力和微观压电铁电测定技术, 研究了不同结晶P(VDF-TrFE)铁电膜的微观铁电压电特性。研究表明, 非晶态微观蝴蝶回线的铁电开关过程平缓, 矫顽场分布较广且场值较高; 与之相比高结晶度薄膜微观蝴蝶回线呈现陡峭而迅速的铁电开关现象, 矫顽场单值且较低。微观压电性的实验表明非晶态压电系数约为 -0.15 /V, 低于晶态的压电系数 -0.30 /V。

关键词 [P\(VDF-TrFE\)](#) [压电](#) [铁电](#) [原子力显微镜](#)

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AFM study of local piezoelectricity and ferroelectricity in P(VDF-TrFE) films

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Abstract Based on the measuring technique of local piezoelectricity and ferroelectricity, the difference of local piezoelectricity and ferroelectricity in P(VDF-TrFE) films with different crystallinity is studied. The experimental results showed that local ferroelectricity in amorphous phases can be characterized by a Rounded Butterfly Loop with a much higher coercive field, while local ferroelectricity in crystalline phases shows a sudden ferroelectric switching with a much lower coercive field. Local piezoelectric coefficient obtained from amorphous phases is about -0.15 /V, which is a little lower than that obtained from crystalline phases (-0.30 /V).

Key words [P\(VDF-TrFE\)](#) [piezoelectricity](#) [ferroelectricity](#) [AFM\(Atomic Force Microscope\)](#)

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