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**Fatigue endurance property of PZT thin films enhanced by Sr and Ba doping.** YANG WANG, ZHENYU LI, QIYUE SHAO, Nanjing National Laboratory of Microstructures, Nanjing University, JUNMING LIU<sup>1</sup>, Nanjing National Laboratory of Microstructures, Nanjing University & International Center for Materials physics, Chinese Academy of Sciences — PZT thin films with Sr and Ba doping at A site, deposited by sol-gel and PLD method respectively, were investigated in our work. The enhancement of fatigue resistance property with increasing doping content were both observed in two kinds of samples. The experiments of dc conductivity vs temperature reveal that this behavior can be attributed to the reduction of oxygen vacancies, due to the stronger chemical bonding of Sr-O and Ba-O bonds compared to that of Pb-O bond suppressing the volatility of Pb ions and intensifying the stability of the metal-oxygen octahedron, since the defect chemistry is believed to play a key role in the fatigue of perovskite ferroelectrics.

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