

Abstract Submitted
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Optical properties of TiO_{2-x} based Re-RAM switching devices under the effect of oxygen vacancies¹ MAAMAR BENKRAOUDA, NOURED-DINE AMRANE, UAE University — The tuning of the optical properties of TiO_{2-x} based materials can be achieved by varying the mole fraction. The accurate calculations of linear optical function (refractive index, reflectance, coefficient of absorption, and both imaginary and real dielectric function) were carried out. The dependence of these properties under the effect of the oxygen mole fraction were analyzed. Using controllable mole fraction, various intermediate resistance states are induced. Furthermore, the presence of oxygen vacancies which is linked to the on-state conduction and resistance switching mechanism and its effect on the optical properties is studied.

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