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Effects of Mo^{6+} Doping on Electrical Conductivity of TiO_2

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The effect of incorporation of Mo^{6+} ions into the srystal structure of TiO_2 was studied. Doped sample was prepared by the method of high-temperature diffusion of molibdenum into the crystal matrix of TiO_2. $MoO_3$was used as the dopant precursor. TiO_2 in rutile form was used as the parent crystal. The conductivity increases (by two orders of magnitude at 250 ^{0}C) and the activation energy decreases (by 45%) as a result of doping, which indicates the modification of electronic structure. The new result is in very good agreement with the previous results on the effects of altervalent cation doping on electrical conductivity of platinized titania, namely, the Fermi level increases with the valancy of the cation.