

THE MECHANISMS OF ADSORPTION AND
DISSOCIATION OF OXYGEN ON THE
THERMALLY ACTIVATED
SURFACE OF MAGNESIA

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S u m m a r y

The forms of adsorbed oxygen on the thermally activated dispersed surface of magnesia and mechanisms of its dissociation and adsorboluminescence are investigated by the methods of temperature programmed desorption, adsorboluminescence, and photostimulated desorption. It is shown that molecular forms of adsorbed oxygen are associated with adsorption on F_s^+ centers. Adsorption on F_s centers is accompanied by the molecule dissociation and healing the oxygen vacancy. Adsorboluminescence originates from electron transitions during oxygen adsorption on both the indicated adsorption sites. The mechanism of photo- and thermostimulated desorption of atomic oxygen under visible light illumination is explained by the dissociation of oxygen adsorbed in the form of O_2^- at an F_s^+ center when it undergoes the transformation to an F_s center as a result of capture electrons released from local levels by illumination.