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Chapter (Book)

Photoeffects on Reactions over Transition Metals

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Abstract

This chapter reviews experiments and theory related to photodesorption and photoreactions over transition metals. At wavelengths above 300 nm, photoinduced desorption of CO from Ni appears to be thermally induced. Around 250 nm there appears to be a true quantum effect in the photodesorption of CO from W and perhaps from Ni, although the latter experiments may be dominated by background effects. The theory that can be applied to the photodesorption problem relies heavily on analogies between photodesorption and electron stimulated desorption. Existing models invoke Auger transitions and electron tunneling as the key steps. These models are in the very early stages of development. For reactions, the only well established case of photoenhancement involving small molecules is the CO oxidation over Pd

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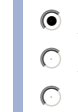
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