

## BOOK REVIEW

**Vibrational Spectroscopies for Adsorbed Species**, ACS Symposium Series 137. Edited by A. T. BELL AND M. L. HAIR, Amer. Chem. Soc., Washington, D.C. 1980. 295 pp., \$31.

This book is a collection of papers presented at a symposium sponsored by the Division of Colloid and Surface Chemistry at the 178th Meeting of the American Chemical Society in Washington, D.C., September 1979. The editors' stated intention is to provide an update of all techniques used to determine the vibrational structure of molecules adsorbed on solid surfaces. The following papers are included:

Transmission infrared spectroscopy of high surface area oxides, M. L. Hair (12 pp)

Fourier transform infrared spectroscopy of adsorbed species, A. T. Bell (24 pp)

Reflection spectroscopy of organic monolayers, D. L. Allara (14 pp)

Infrared reflection-absorption spectra of CO on Cu, P. Hollins and J. Pritchard (24 pp)

Infrared ellipsometric spectroscopy of CO on Ni(100), J. D. Fedyk and M. J. Dignam (24 pp)

Surface electromagnetic wave spectroscopy, R. J. Bell, R. W. Alexander, and C. A. Ward (20 pp)

Raman spectra of surface species, B. A. Morrow (22 pp)

Diffuse reflectance spectroscopy applied to surfaces, K. Klier (22 pp)

Electron energy loss spectroscopy of molecules

adsorbed on rhodium single crystal surfaces, L. H. Dubois and G. A. Somorjai (28 pp)

Electron energy loss spectroscopy of molecules adsorbed on Ru, P. A. Thiel and W. H. Weinberg (26 pp)

Inelastic electron tunneling spectroscopy, J. Kirtley (30 pp)

Neutron scattering spectroscopy of adsorbed molecules, H. Taub (34 pp)

A collection of this type is bound to suffer from a certain unevenness of approach. Most of the authors attempt to review recent literature (up to 1979), while others rely on specific examples to illustrate the techniques. However, the advantage of having a total of ten different techniques for investigating vibrations of adsorbed species, described within one reasonably priced volume (given current trends in textbook costs) outweighs any lack of uniformity in presentation. The catalytic chemist will find useful updates of familiar techniques, along with discussion of new methods which hold future promise.

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