



Spectroscopy in Catalysis

By J. W. Niemantsverdriet



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Superbly organized and of great pedagogic value, 'Spectroscopy in Catalysis' describes the most important modern analytical techniques used to investigate catalytic surfaces. These include electron, ion, and vibrational spectroscopy, mass spectrometry, temperature-programmed techniques, diffraction, and microscopy. With the focus on practical use, rather than theory, each chapter presents current applications to illustrate the type of information that the technique provides and evaluates its possibilities and limitations, allowing selection of the best catalyst and the correct technique to solve a given problem. This third edition includes significant new developments and case studies, with all the chapters updated by way of recent examples and relevant new literature. For students and for everyone who wants a digestible introduction to catalyst characterization.

From reviews of the previous editions:

'This is a truly valuable book ... very useful for industrial practitioners who need to be aware of the type of information that can be obtained from modern surface spectroscopies The book has a superb pedagogic value...'

Journal of Catalysis

'... this is an excellent text on spectroscopies in catalysis and I highly recommend it for ... introductory courses on heterogeneous catalysis or as a general introductory monograph.'

Journal of the American Chemical Society



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Editorial Review

Review

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Journal of Catalysis

'The author has achieved the clarity of presentation without resorting to unnecessary simplifications. The drawings are very instructive and the examples are very well chosen I am convinced that it will soon become an indispensable companion for everybody interested in the studies of catalysis.'

Newsletter of the European Federation of the Catalysis Societies

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Journal of the American Chemical Society

'This admirable and beautifully organized book ... should prove invaluable to generations of graduate students and others embarking on a serious study of solid catalysts.'

Advanced Materials

'Niemantsverdriet's book enriches the scientific literature. A description of surface spectroscopy with textbook character was not previously available.'

Nachrichten aus Chemie, Technik und Laboratorium

From the Publisher

Spectroscopy in Catalysis describes the most important modern analytical techniques used in investigate catalytic surfaces. These techniques include electron spectroscopy (XPS, UPS, AES, EELS), ion spectroscopy (SIMS, SNMS, RBS, LEIS). vibrational spectroscopy (infrared, Raman, EELS), temperature programmed techniques (TPR, TPO, TDS), diffraction (XRD, LEED, EXAFS), and microscopy (TEM, SEM, STEM, STM, AFM, and FIM).

From the Back Cover

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