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## Preface to this special issue in honour of Prof. Dr. Helmut Knözinger on the occasion of his 65th birthday

In July 2000, at the 12th International Congress on Catalysis in Granada, Helmut Knözinger's



period in office as the president of the IACS (International Association of Catalysis Societies) will come to a close. This summer also sees him celebrate his 65th birthday and retire from teaching at the Ludwig-Maximilians-Universität (LMU) in Munich, the institute with which he has been associated since 1953. And so ends the official involvement of a man who has been a leading figure in the world of catalytic chemistry for the last 30 years.

Helmut Knözinger was born in Weilheim, Upper Bavaria, Germany, on 10 July 1935, and began his academic career in Munich in 1953 studying physics at the LMU. On completing his undergraduate studies (1957), he was persuaded by his mentor Prof. Schwab to give up on a promising career as a photographer in order to continue in academia and gain his doctorate (1961). His interests moved to

physical chemistry and so started his involvement in the area of spectroscopy, which has lasted some 40 years and resulted in the publication of over 350 papers. A teaching assistantship at the LMU followed in 1962, culminating with his post-doctoral thesis and promotion to a lectureship in 1967. Between 1968 and 1969, he was guest lecturer in Caracas, Venezuela, a position which established his strong links with research in South America. A senior lectureship at the LMU followed in 1973, and since 1980 he has been full professor of physical chemistry at the Institut für Physikalische Chemie. Indeed, it is said that no undergraduate student escapes the chemistry department without passing through Knözinger's courses on vibrational and surface spectroscopy. In the last 20 years, he has been supervisor to over 80 final-year graduate and Ph.D. students, and has seen many of them go on to contribute further in the field of catalysis within industrial or academic research.

Helmut Knözinger's contribution to research in heterogeneous catalysis has been considerable, and is mirrored by the international recognition he has received in the form of awards, honours and over 80 invited and plenary lectures across the globe. In 1980, he was awarded the Ciapetta Lectureship from the North American Catalysis Society, which was followed in 1988 by the Ipatieff Lectureship and a guest professorship at Northwestern University, Evanston, USA. His accompanying lecture tour across America is remembered as much for its scientific content as for the entertainment value of his

missing luggage; the suitcases typically arriving one day after his departure for the next venue! He was also awarded guest professorships at the universities of Xiamen, China (1985) and Amsterdam (1989), and has been a frequent visitor to the Pierre et Marie Curie University in Paris (1995–1997). In 1995, he was enrolled as an honorary member into the Hungarian Academy of Sciences. His achievements in the field of catalyst characterization and surface chemistry were also honoured through the award of the Max Planck Society Research Prize (1995) and the Gay Lussac Prize of the Alexander von Humboldt Foundation (1997). His lifetime contribution to fundamental and applied catalytic research in Germany was formally recognised in 1998 when he was awarded the prestigious Alwin Mittasch Medal by DECHEMA (German Society for Chemical Apparatus, Chemical Engineering and Biotechnology).

His research interests have spanned the breadth of the catalytic spectrum, though he is best noted for his work in the area of surface chemistry and spectroscopy, with emphasis on the structural characterization of supported (oxide, sulphide and metal) catalysts. He was one of the first people to truly define the criteria for selection of suitable probe molecules for the investigation of catalyst surfaces (in *Elementary Reaction Steps in Heterogeneous Catalysis*, Kluwer Academic Publishers, 1993), and his specialization in this field has led to the publication of numerous review articles and research papers. One of his most cited publications must surely be his work together with Ratnasamy on the characterization of hydroxyl groups on alumina (*Catal. Rev. Sci. Eng.* 17 (1978) 31), without which the reference list of any work on alumina is incomplete. His largest work to date has been the part writing, part editing (together with colleagues Weitkamp and Ertl) of the highly acclaimed *Handbook of Heterogeneous Catalysis* (Wiley-VCH, 1997), already set to become one of the most important compilations of work on catalysis.

Membership of the major organising bodies in international catalysis has also accounted for much of Helmut Knözinger's time. On the domestic front he has been a member of the Catalysis Section of Dechema since 1983; its deputy chairman during the years of 1993–1996, and its chairman from 1996–1999. From 1993–1999, he was also Germany's

representative on the Council of the European Federation of Catalysis Societies (EFCATS). Since 1984, he has been a member of the Council of the International Congress on Catalysis, and was its vice-president between 1995–1996. Since 1996, he has been president of the International Association of Catalysis Societies (IACS), a post which he hands over this year. He has also been influential on the academic publishing front, where he has served (and is indeed still serving) on the editorial boards of nearly every major journal covering catalytic chemistry. These include: *Journal of Catalysis* (since 1980), *Catalysis Today* (since 1986), *Catalysis Letters* (since 1990), *Topics in Catalysis* (since 1994) and *Applied Catalysis B* (since 1996), to name but a few.

No comment on the achievements and work of Helmut Knözinger would be complete, however, without a word to the character of the man himself. Hardly a year goes by without him skiing or hiking in the mountains with his group (even today still leading from the front!). Many a guest or visitor to his laboratory can also attest to his hospitality, and the idiom that the exchange of intellectual ideas can be enhanced by pleasant surroundings and the presence of a *Weißbier* and a few *Brez'n*. Even after a lifetime spent in the pursuit of solutions to catalytic chemistry's important (and mostly difficult) questions, his interest in the subject, his enthusiasm for work, and his insight remain unblemished and keen. Above all these qualities, however, it is his ability to inspire others, students and colleagues alike, to join the search and encourage them to develop their own ideas, which sets him apart and for which he will be best remembered.

Der Mensch muss bei dem Glauben verharren,  
dass das Unbegreifliche begreiflich sei; er würde  
sonst nicht forschen.

Man's quest for knowledge is fuelled by the belief  
that the incomprehensible can be comprehended.

(Johann Wolfgang von Goethe)

We hope that this special edition of the *Journal of Molecular Catalysis A* indeed shows him the appreciation felt for all his efforts over the years, from

those for whom he has been a helpful colleague, a wonderful teacher and mentor, and a really good friend. May he continue to guide and inspire the catalysis community for a long time to come.

Dr. Wayne Daniell  
*Department Chemie, Physikalische Chemie,  
Ludwig-Maximilians-Universität München,  
München, Germany*

Dr. Gerhard Mestl\*  
*Abteilung Anorganische Chemie,  
Fritz-Haber-Institut der Max-Planck Gesellschaft,  
Abt. Anorganische Chemie, Faradayweg 4-6, 14195  
Berlin, Germany  
E-mail address: mestl@fhi-berlin.mpg.de*

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\* Corresponding author. Tel.: +49-30-8413-4440; fax: +49-30-8413-4401.