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Editorial

In memory of our friend and colleague Eric Derouane, 1944–2008

Professor Eric Derouane died on 17th March 2008 from a heart attack in his home in Luz, Lagos, Portugal. With him, the Catalysis Community has lost one of its strongest and brilliant scientists.

Born on 4th July 1944 at Péruwelz (Hainaut), Belgium, Eric Derouane obtained a Licence degree at the University of Liège, B (1965), a Master of Arts (MA) degree in Chemistry in Prof. J. Turkevich's laboratory at Princeton University, USA (1966) and a Doctorat ès Sciences (>PhD) at the University of Liège, B (1968), including a year (1966–1967) in France at the "Service de Physique du Solide et de Résonance Magnétique, CEN Saclay" in Prof. A. Abragam's laboratory. He stayed in USA for a year (1969–1970) at Stanford University as a visiting Scholar in Prof. M. Boudart's laboratory. He became Research Assistant at the "Fonds National de la Recherche Scientifique" (FNRS) and Lecturer at the University of Liège, B (1969–1973). In 1973, he was appointed Professor at the "Facultés Universitaires Notre-Dame de la Paix" (FUNDP) in Namur, B, where he created the Laboratory of Catalysis, of which he remained Director until 1995. He was on sabbatical leaves in 1979 as Research Fellow with J. Sinfelt at Exxon Res. & Develop. Corp., Linden, USA, and in 1982–1984 as Research Scientist, Head of Exploratory Catalysis Synthesis Group at Mobil Res. & Develop. Corp., Central Research Laboratory, at Princeton, USA.

In 1995, he became Full Professor at the University of Liverpool and was appointed as Director of the Leverhulme Centre for Innovative Catalysis (LCIC).

In 2003, he obtained the prestigious Gulbenkian Professorship at the University of Algarve in Faro, P, where he was the Director of the Chemical Research Centre. Later he also became an invited Professor at the "Instituto Superior Tecnico" (IST) of the Technical University of Lisbon, where he had extensive cooperation with the group led by Prof. F. Ramôa Ribeiro.

His main fields of investigation dealt with catalysis over zeolites in general, and supported metals, novel materials and mixed oxides in particular, and alkane upgrading and fine chemicals more specifically. One of Eric's most striking qualities was his acute interest for every new scientific discovery and for industrial applications of his findings.

Eric Derouane had an unusual working efficiency. He had a high intellectual mobility and was always attracted by new materials and new concepts. Among them, one can mention ZSM-5/MFI new zeolite in the early 70s, leading to a 30-year collaboration with J.C. Védrine, cuprate-type superconductors, confinement effect and molecular traffic control in microporous zeolitic materials. He also studied reaction mechanisms using isotopic labelling and *in situ* MAS–NMR in the 80s, combinatorial catalysis and high throughput technology in the late 90s.

During his 20 years of dedicated service to the University of Namur, Eric Derouane developed new concepts, which had an important impact on catalysis and zeolite communities. In 1986, he was elected Head of the Chemistry Department. He then embarked upon an impressive re-structuring programme to improve its efficiency. The model, which he initiated, is still in service today. His laboratory was recognised as an outstanding school of scientific research and education in catalysis.

Very early on, Eric Derouane realised the importance of interdisciplinarity, which led him to play a key role in the creation of the Institute for Studies in Interface Sciences (ISIS) at Namur in 1987, which gathered laboratories of physics and chemistry for 20 years. Eric Derouane also paid heed to technological transfer to industries. After his experience gained through his sabbatical positions at Exxon and at Mobil, he developed collaborations with industrial partners and served as consultant for many companies.

At Liverpool, the aim of the LCIC was to promote creative fundamental catalytic science and often to take up industrial challenges. Eric Derouane defined innovation as "the creation of new or better products or processes, implying creativity, usefulness, and application". Towards this end, the LCIC had industrial affiliates as partners. Under his leadership the LCIC became the largest catalysis centre in the UK and a centre of scientific exchanges and collaborations. Eric Derouane established links with many UK and international laboratories. In 1997, he created an European Associated Laboratory "Laboratory for high specificity catalysis" between LCIC/University of Liverpool and Institut de Recherches sur la Catalyse, Lyon/CNRS, whose Director was J.C. Védrine up to 2003.

In 1999, he co-founded with Prof. S. Roberts the *spin-off* Liverpool-based company "Stylacats", of which he became Director. He provided wise suggestions and ideas, which led the company to pioneer new technologies, in particular, catalysts for asymmetric hydrogenation, microwave-induced reactions and enzyme mimetics.

At the University of Faro, Eric Derouane developed a research project, jointly with the Instituto Tecnico de Lisboa, on Friedel–Crafts reactions. He also collaborated closely on various research projects with Prof. F. Ramôa Ribeiro's zeolite group of the Instituto Superior Tecnico of the Technical University of Lisbon.

Eric Derouane co-authored over 400 scientific papers, 11 books and 61 patents.

Eric Derouane has largely contributed to the development and strengthening of the European Catalysis Community. He created in 1975 the European Association in Catalysis (EUROCAT), a consortium of more than 30 European laboratories under the auspices of the Council of Europe and promoted standardisation of characterisation of catalysts: For this purpose, catalysts such as Euro-Pt1 to -Pt4 (Pt/SiO_2 and $Pt\text{-}Re/SiO_2$), Euro-Ni1 &-Ni2 (Ni/SiO_2), Eurocat zeolite (TS1-type), Eurocat oxides (V_2O_5/TiO_2 and $V_2O_5\text{-}WO_3/TiO_2$) were synthesised by industrial companies (Johnson Matthey from

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United Kingdom, Unilever from the Netherlands, Rhône Poulenc from France, Austrian Energy & Environment, Wien, from Austria and distributed to the 30 laboratories in Europe for characterisation. This work led to several articles by G. Bond, J. Coenen, P. Wells and others in Applied Catalysis in the 80s (see for instance Appl. Catal. A, 18 (1985) 221-272) or Two special issues of *Catalysis Today* by J.C. Védrine and others in the 90s Vol 20 (1) (1994) 1-183 and vol. 56 (4) (2000) 329-460 for V_2O_5/TiO_2 and V_2O_5-WO_3/TiO_2, respectively, in order to help any scientist to calibrate his/her characterisation techniques by having standard and well characterised samples.

This Eurocat group paved the way to the creation of the European Federation of Catalysis Societies (EFCATS) and of the François Gault lectureship for which Eric Derouane played a decisive role. He was elected President of EFCATS in 1995 for two years.

Eric Derouane worked as Editor-in-chief of *J. Mol. Catal. A: Chemical* since 1982 till his death. He was member of the Editorial Boards of many scientific journals and member of the scientific committees of many congresses and colloquia. He co-organised several congresses himself, in particular with Prof. F. Lemos and F. Ramôa Ribeiro in Portugal on several NATO Advanced Studies Institutes on topics including "the conversion of light alkanes", "combinatorial catalysis and high throughput catalyst design and testing", "principles and methods for accelerated catalyst design and testing" and "sustainable strategies for the upgrading of natural gas". The content of these summer schools were published in NATO editions by Riedel & Co.

Eric Derouane's contributions to catalysis have been recognised by many awards and academic honours, including the Wauters Prize (1964), the Mund Prize (1967) of the "Société Royale de Chimie", the Stas-Spring Prize (1971) and the Adolphe Wetrems Prize (1975) of the "Académie Royale de Belgique", the Rosetta Briegel–Barton Lecturership at the University of Oklahoma (1973), the Prize of the "Cercle of Alumni de la Fondation Universitaire de Belgique" (1980), the Ciapetta Lectureship of the North American Catalysis Society (1981), the Catalysis Lectureship of the Société Chimique de France (1993) and the prestigious Francqui Prize, B (1994), the highest honor for all Sciences in Belgium.

He was made "Officier de l'Ordre Léopold" in Belgium (1990), corresponding Member of the "Académie Royale des Sciences, des Lettres et des Beaux Arts de Belgique" (1991), member of the "New York Academy of Sciences" and Associate Member of the "European Academy of Arts, Sciences and Humanities". He was conferred Doctor Honoris Causa by the Technical University of Lisbon (1996).

Eric Derouane attracted many students and scholars to his laboratories in Namur, Liverpool and Faro. His energy, his clear mind and his broad knowledge impressed his students, researchers and colleagues. He was an outstanding and demanding professor, always ready to share his knowledge with his students. His courses were always clear, highly structured and easily understandable. Today many of his former students and post-docs occupy prominent positions in universities and industries. All of them will remember his brilliant and rigorous scientific approach, and no doubt they all will greatly miss him (Fig. 1).

In his honour, many of Eric's friends and colleagues decided to pay their tribute to him by participating in a two days symposium organised in Lisbon at the Instituto Superior Técnico of the Technical University of Lisbon on 25–26 September 2008 and organised by Prof. Jacques C. Védrine and by Prof. Fernando Ramôa Ribeiro and his team. Almost one hundred participants attended this symposium from all over le world, in particular from Belgium, Canada, Denmark, France, Italy, Poland, Portugal, Russia, South Africa, Spain, United Kingdom, etc. Many messages of sympathy were received from all over the world as recognition of his worldwide influence. The scientific contributions for this symposium were in all his fields of interest with particular emphases to zeolites, confinement effect, molecular traffic control and catalytic reaction mechanism using MAS–NMR technique, both in heterogeneous and homogeneous catalysis and both from industrial and academic scientists, in excellent coherence with his own scientific career. This special issue of "*Journal of Molecular Catalysis A: Chemical*", a journal Eric Derouane was Editor in chief for 26 years, assembles contributions of many of his colleagues from all over the world. These contributions deal with his major scientific fields of interest, whatever be in zeolites (in particular, confinement effect and molecular traffic control), in mixed metal oxides and in homogeneous and heterogeneous catalyses and reaction mechanisms determination.

Fig. 1. Eric Derouane in Paris during the 14th International Congress in Catalysis (ICC) in July 2004.

We hope that Eric is resting in peace.

Fernando Ramôa Ribeiro
Instituto Superior Tecnico, Universidade Técnica de Lisboa, Av. Rovisco Pais, 1, P-10049-001 Lisboa, Portugal

Jacques C. Védrine[*,1]
Laboratoire de Réactivité de Surface, Université Pierre et Marie Curie, Tour 55-54,Casier 178, 4 Place Jussieu, Paris, F-75252, France

[*] Corresponding author. Tel.: +33 144275514; fax: +33 144276033.
E-mail addresses: ramoa.ribeiro@ist.utl.pt (F.R. Ribeiro), jacques.vedrine@upmc.fr (J.C. Védrine)

[1] and his colleagues and friends from Namur, Belgium, from Caen, Montpellier, Mulhouse, Paris, France, from Aveiro, Faro, Lisboa, Porto, Portugal, from Moskva, Russia and from Bath, Cardiff, Glasgow, Liverpool, United Kingdom.

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