

We are confident that this issue will be of interest to the journal's regular readers, as well as many more. Also take a little time to read the text by some of his friends who preface the issue. We hope that his memory will help us to be better persons and scientists. *¡Hasta siempre!*

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## Víctor Manuel Orera Clemente – Biographical sketch of a friend and colleague



When I completed my bachelor's degree, Prof. Casas invited me to join his laboratory as part of a small, newly formed research group comprising Dr. Alcalá and a young student who had just begun his PhD. That student was Víctor Orera, and, as our boss was absent, it fell to him to welcome me and describe their scientific activities with his proverbial optimism. That is how we met, and it marked the beginning of a close scientific collaboration and a firm lifelong friendship. Even when our professional interests later diverged, we still continued to exchange our points of view, safe in the knowledge that we could rely on each other to be a loyal, constructive, and discreet critic. This introduction, that I do not want to extend, reveals how hard it is for me to comment on the man Víctor was.

Víctor was born on 20 December 1950 in the city of Castellón de la Plana where his civil-servant parents had been posted. At the age of six, he came to Zaragoza, the city he was linked with from then on and where, in the main, he enjoyed a long and successful career. With family roots in Aragon and captivated by the Pyrenees from an early age, he felt Aragonese through and through, despite his universal outlook: he realised the pursuit of knowledge, which he dedicated his life to, could be no other way.

The eldest of four children, Víctor was always brimming with life and optimism that was only tempered by his extreme generosity and ingrained sense of family and social responsibility. Sincere, loyal, and demanding of himself and others, mountains and research were his two passions. An idealist with great social sensitivity, he believed honest scientists should not work just for their own curriculum and prestige and instead should work on key areas for society. So that is exactly what he did.

After completing his secondary education at the Calasancio PP Escolapios school, he successfully completed his Degree in Physics, specialising in Optics, at the Faculty of Sciences of the University of Zaragoza in 1972, obtaining both an Extraordinary Degree Award and the Daza Valdés Final Degree Award by the Spanish Optical Society. That same year he began his research, supervised by Dr. Alcalá Aranda, an activity he shared with teaching at the German School of Zaragoza. When he obtained a research staff training grant in 1973 and was appointed teaching assistant of optics, he was able to work

full-time on his doctoral thesis in physics entitled: "Study of the formation and evolution of large aggregates of defects in fluorite crystals". He defended his thesis in 1976 and obtained the Extraordinary PhD Award from the University of Zaragoza.

At a time when leaving Spain was necessary for a change of scene and to join in cutting-edge research in his field, he stayed at the Atomic Energy Research Establishment, Materials Development Division in Harwell, United Kingdom, for ten months as a visiting researcher while working on his PhD. A postdoctoral visit to the Solid State Division of Oak Ridge National Laboratory (ORNL) in the United States with Dr. Yok Chen from 1978 to 1979 exerted a profound influence on his scientific development. Later, he returned to ORNL where he was an external scientific consultant from 1986 to 1987.

After passing a public competitive examination, he became an assistant lecturer at the University of Zaragoza in 1978, where he continued his teaching and research at the Faculty of Sciences until he was appointed a scientific researcher at the CSIC (Superior Council of Scientific Research) in 1988. He arrived at the ICMA (Institute of Materials Science of Aragon), recently created as a CSIC-University of Zaragoza joint centre—he was one of its proponents—at a time when Spanish research into materials science was on the rise. Two years later (1990) he was promoted to research professor.

First at the University of Zaragoza and then at the CSIC, Víctor knew how to combine first-rate worldwide research with management roles in research institutions. He was vice dean of the Faculty of Sciences of the University of Zaragoza (1984–86) at key times during the democratic transformation of Spanish universities and faculties. He was the director of the ICMA (1991–94), scientific coordinator of the Materials Area of the CSIC (1994–96), a member of the CSIC Scientific Committee (1996–2004), institutional coordinator of the CSIC in Aragon (2005) and then CSIC vice-president of organisation and institutional relationships from December 2005 to March 2006, when he resigned due to illness. After recovering, he became the CSIC representative at the European Energy Research Alliance, JP-H2 (2010–14), and CSIC institutional coordinator in Aragon (2011–15).

Magnanimous in his undertakings, he was actively involved in the scientific community as: vice-president of the Specialised Solid State Physics Group (GEFES) of the Spanish Royal Society of Physics (1984–86), member of the Management Committee of the RIS Project (1997–99), vice-president of the Spanish Society of Materials (SEMATEC, 1997–2000), and member of the Physical and Engineering Steering Committee of the European Science Foundation (1997–2000). He was also an external evaluator of the Materials Program of the Energy Department of the United States (from 2003) and a member of the advisory committee for innovation and knowledge transfer of the Spanish Ministry of Science and Innovation (2011–14).

His work was recognised with several distinctions: Fellow of the American Physical Society (1993), Domingo Martínez Foundation Award (1999), “Epsilon de Oro” from the Spanish Electroceramics Society (2005), Honorary Patron of the Foundation for the Development of Hydrogen Technologies in Aragon (2008), and Fellow of the European Ceramic Society (2017).

Victor always viewed research as a team activity performed by people with complementary skills. Ceramics processing and fuel cells were lines of research that he led for years in the Excellence Group of the Government of Aragon, LPM, Laser Processing of Materials (2003–10), and in the Consolidated Group, ProCaCEF, Processing and Characterisation of Structural and Functional Ceramics (2011–16).

Unanimously voted in as a full member of the Royal Academy of Exact, Physical, Chemical and Natural Sciences of Zaragoza, he read his inaugural address on 14 June 2007, receiving medal number 39 and joining the physics section. This is where he worked, generously and effectively lending his time and experience, until he died on 28 January 2020.

Previously, at the end of 2015, when he turned 65, he retired to pass his baton onto the next generation. However, his scientific activity was not affected as he became ad honorem professor of the CSIC. During this last period, his former colleagues were able to continue counting on his generous contributions. It was at this time that, in collaboration with his wife, History Professor and Researcher Pilar Utrilla, he began studying prehistoric pigments using spectroscopic techniques.

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## Víctor, a good man

## Víctor, un buen hombre



“The mouth of the righteous speaks wisdom,  
and his tongue talks of justice”  
(Psalms 37: 30)

When I first met Víctor, he was on CSIC’s Scientific Committee, where he sat in one of the positions appointed by the president among the department’s prestigious scientists while I represented the Institute of Humanities and Social Sciences. From that moment on, we developed a friendship in part due to his closeness to the world of humanities. Beforehand, he had been a member himself as the Materials Area coordinator.

I recall that when he spoke a respectful silence filled the room. The minutes recorded by the Scientific Committee adequately reflect the topics that most concerned him. The time we spent together was initially marked by the economic crisis which required a special care to maintain the fundamental elements of scientific life. The first of which were matters that affected personnel in a variety of ways, ranging from hiring increase proposals to providing stability to our dedicated scientists that showed great promise. Víctor also showed interest

in the process of interim tenured scientists, and ensured that candidates received equal treatment as that of public servants.

In addition to his interests around Aragon’s economic fabric and the streamlining of management procedures, it was his defense of CSIC that led him to consider the need to improve the policy of the “mixed centers”, the establishment of which must take precedence over the defense of the interests of the body and a suitable scientific project.

Certainly, his time in the Vice-Presidency of Organization and Institutional Relations was cut short due to disease crossing his path (30/11/2005–11/02/2006). During that brief period of time, I was his collaborator as head of the Board of Directors, which raised the need to strengthen the figure of the territorial delegates.

His commitment to CSIC was complemented by his commitment to Aragon, a community in which he brilliantly carried out the responsibility of the Delegation for two periods, supporting numerous initiatives for the development of his homeland: his efforts for the collaboration with the University of Zaragoza (his alma mater), the support of