



Scientific Biography Marcelle Gaune-Esard

Marcelle Gaune-Escard was born in Tunis, Tunisia and lives with her husband in Marseille, France. They have 2 children and 2 granddaughters.

Marcelle Gaune-Escard received her PhD (*Thèse de 3^{ème} cycle*) in 1968 and *Thèse d'Etat es- Sciences Physiques* in 1972 from the *University of Marseille, France*. During her education, she also obtained a Certificate of Proficiency (University of Cambridge, UK) in 1960 and was certified as a Gold Assayer by *La Monnaie de Paris* in 1976, following a family tradition.

Her thesis work, with the late Prof. Y. Doucet, was concerned with the thermodynamics of mixing of molten salts. Upon completing her graduate work she began a highly successful research career at the Centre National de la Recherche Scientifique (CNRS) in Marseille. Since coming to CNRS she has rapidly risen to positions of increasing responsibility. She was Director of Research at the Ecole Polytechnique Universitaire de Marseille, Institut Universitaire des Systèmes Thermiques Industriels, CNRS-UMR 7343, in the field of engineering sciences, and she has been in charge of the Thermodynamics of High Temperature Liquids group at CNRS-UMR over 30 years. She is currently Em. Director of Research there.

Marcelle Gaune-Escard has had a long and distinguished scientific career. She has produced over 350 international publications, and she has acted as editor of several books or guest editor of various journals. In addition, she has passed on her extensive scientific knowledge, mentoring 15 Ph.D. students as well as numerous post-doctoral and visiting researchers.

Her main research interests have been in the areas of thermodynamics and calorimetry of molten salts, with rare earth compounds and mixtures being areas of significant focus. She has also performed important work on phase diagrams, electrochemistry, and the complex formation and structure of molten and solid salts. In applied science, she has lately been interested in incineration, pyroprocessing, energy ranging from solar to nuclear, with emphasis given to the molten salt role in the process.

These research activities and achievements were highlighted by the 2004 “Max Bredig Award”, which was granted by the Electrochemical Society (USA) for the first time to a French scientist (and a female)

Marcelle Gaune-Escard has been an important proponent for saving information and making it accessible to the scientific community at large. She initiated and is the current editor of *Molten Salt Bulletin*. This important periodical gives information on publications and meetings in the field, in addition to a main research article in each volume. Another major initiative of hers supporting the molten salt community is her work on setting up a molten salt data bank following the steps of G. J. Janz's pioneering work.

Marcelle Gaune-Escard has a wide scientific network including 14 countries in Europe, Asia and America. She has been able for instance to set up and fund comprehensive cooperation with East-European scientists involved in molten salt chemistry. She has also organized numerous molten salt conferences, not only in France but also in China, Crete, Tunisia, Turkey, conferences that have marked key milestones in the progress of international collaboration in molten salt research.

It is worth highlighting that the EUCHEM conference on Molten Salts and Ionic Liquids (Tunisia, 2006), which since the first EUCHEM Conference on Molten Salts (Norway, 1966) organized by Håkon Flood, merged for the first time the molten salt and ionic liquids communities. This EUCHEM event in Tunisia brought together 53 international leaders and contributors from the many points of the figurative and literal compasses to discuss the multifaceted chemistries of molten salts and ionic liquids and to look for the chemical overlap among the common challenges

The related book *Molten Salts and Ionic Liquids: Never the Twain?* (Marcelle Gaune-Escard and Kenneth R. Seddon Eds., John Wiley & Sons, 2010) included a passage from Rudyard Kipling's poem, *The Ballad of East and West*—"Oh, East is East, and West is West, and never the twain shall meet ..."—to illustrate and bemoan the split between the molten salt and ionic liquids communities.

Marcelle Gaune-Escard is a member of The Electrochemical Society (ECS), a Fellow of the International Union of Pure and Applied Chemistry (IUPAC), a member of The Metals, Minerals, and Materials Society (TMS), a member of International Council for Science : Committee on Data for Science and Technology (ICSU: CODATA), the European member of the Molten Salt Discussion Group, Royal Society of Chemistry (MSDG, RSC, UK) and a member of International Thorium Molten-Salt Forum"(ITMSF, Japan).

She is also a recognized expert in various European programs and in the Organization for Economic Co-operation and Development (OECD) for the pyrometallurgical processing of nuclear waste, as in several industries dealing with molten salt applications for energy ranging from solar to nuclear.