

DR. CHRISTIAN AMATORE

BIODATA:

Amatore is Emeritus Directeur de Recherche in CNRS, and Professor, Ecole Normale Supérieure (PSL) and University Pierre and Marie Curie (Sorbonne University). He obtained his Doctorat d'Etat ès Sciences from University Denis Diderot. He is Member of The French Académie des Sciences, where he has served as Délégué for Education and Training; Member of The Academia Europaea; Foreign Member of The Chinese Academy of Sciences and of the Brazilian Academy of Sciences; Hon. Fellow, Royal Society of Chemistry and Chinese Chemical Society; Fellow and President, International Society of Electrochemistry; Fellow of the Electrochemical Society; Hon. Member, Israeli Chemical Society. He is Honorary Professor and Doctor H.C. of eight major universities worldwide. He served as one of the twenty members of the High Council of Science and Technology which advised The President of the French Republic on scientific matters. He received many national and international awards and prestigious medals and is Knight of the French Republic in the Orders of Legion d'Honneur, of Meritus and of Academic Palms.

Amatore's research may be classified into two main areas whose successes are directly rooted on a fine understanding of electrochemical concepts:

One deals with the establishment and pioneering of ultramicroelectrodes, initially in strong collaboration with Mark Wightman, for electro(bio)analytical purposes with resolution down to the range of attomoles, submicrometers and nanoseconds. These methods have recently been implemented under microfluidic conditions and for the study of nanoparticles catalytic activity. Most importantly, the "artificial synapse" concept invented conjointly by Amatore and Wightman for the investigation of cellular behavior at the single cell or tissue levels has led to a series of important contributions into the biology of living cells.

Amatore's second series of contributions deals with the development of advanced electrochemical methodologies for investigating extremely complex mechanisms of organic and organometallic chemistry under the very conditions used by synthetic chemists. Amatore's activity in this domain is best illustrated by the rationalization of electron transfer catalysis, electron transfer activation of molecules and especially by a thorough series of works relative to the elucidation of the most important mechanistic aspects of catalysis by homogeneous palladium complexes, an extremely active area for carbon-carbon bond-making in fine chemical industry which was awarded the Nobel Prize in Chemistry in 2010.