



Curriculum Vitae (January 2025)

1. Personal and Professional Data

<i>Birth date (and place)</i>	: December, 9th, 1951 (in Sidi-Bel-Abbès, Algeria).
<i>Citizenship</i>	: French (by Birth).
<i>Marital Status</i>	: Married, two children.
<i>Present positions</i>	: Emeritus Professor in CNRS & Ecole Normale Supérieure, Paris, France, Distinguished Visiting Professor, Xiamen University, Xiamen, China.
<i>Address (Work)</i>	: Ecole Normale Supérieure, Chemistry Department, UMR CNRS 8640 PASTEUR 24 rue Lhomond, 75231 Paris Cedex 05, France
<i>Address (Home)</i>	: 186 Avenue d'Italie 75013 Paris, France
<i>Phone</i>	: +33 7 86 25 84 88 (<i>Private & Professional Cellphone</i>)
<i>e-mail addresses</i>	: christian.amatore@ens.psl.eu, christian.amatore@academie-sciences.fr
<i>ORCID ID</i>	: 0000-0002-2561-1137

2. Academic Training

Undergraduate studies (1971-1975) : Ecole Normale Supérieure and University Pierre et Marie Curie, Paris, France,
Curricula: M1 & M2 in Analytical and Physical-Chemistry, Chemical Physics, Organic Chemistry,
M1 in Mathematics and Physics.

Doctorat d'Etat ès Sciences(1979) : University Paris Diderot, Paris. Ph.D. Advisor: Professor Jean-Michel Savéant.
(*"Doctorat d'Etat ès Sciences"* was a former French Degree equivalent to the modern Ph.D. & Habilitation).

3. Professional Career

o **Permanent positions**

- 1974-1975 : Assistant Professor, Ecole Normale Supérieure (ENS), Department of Chemistry, Paris, France,
- 1975-1979 : CNRS Assistant Professor (CR 2); CNRS and University Paris Diderot, Paris, France,
- 1979-1982 : CNRS Associate Professor (CR 1); CNRS and University Paris Diderot, Paris, France,
- 1982-1983 : CNRS-NSF Research Assistant Professor; Indiana University at Bloomington, USA, with Prof. Jay K. Kochi,
- 1984-1990 : CNRS Professor (DR2); CNRS and ENS, Department of Chemistry, Paris, France,
- 1990-2001 : CNRS Full Professor (DR1); CNRS and ENS, Department of Chemistry, Paris, France,
- 2001-2007 : Full Professor of the Highest Ranks (PRCE, 1 & 2); University Pierre et Marie Curie (UPMC) and ENS,
- 2007-2017 : CNRS Full Professor of the Highest Ranks (DRCE, 1 & 2); CNRS and ENS,
- 2017-present : Emeritus Professor of the Highest Rank (DRCE 2 CNRS); CNRS and ENS,
- 2017-present : Distinguished Professor, Xiamen University, Xiamen, China.

o **Temporary and Honorary appointments (the duration of the appointments varied between one week and one month):**

Visiting Professor, University of Houston (USA, July 1984) * Visiting Professor, Indiana University at Bloomington (USA, July 1986) * Honorary Professor, University of Modena (Italy, May 1993) * Honorary Professor, University of Padova (Italy, March 1996) * JSPS Visiting Professor (Japan, 1997) * Guest Professor, East Normal China University, Shanghai (China, April 2002 & May 2004) * Honorary Professor, Chinese Academy of Science, Changchun (China, October 2003) * Honorary Guest Professor, Wuhan University (China, May 2004) * Honorary Professor, Xiamen University (China, one month, each year from 2004 to 2016) * Hinshelwood Lecturer, Oxford (UK, May 2005) * Advisory Professor, Fudan University, Shanghai (China, July 2005) * Visiting Professor, University of Maceio (Brazil, May 2008) * Visiting Professor, Setif, Bejaia, Algiers, & Oran Universities (Algeria, June 2008) * Visiting Professor, Kharkov National University of Radioelectronics (Ukraine, September 2009) * Visiting Professor, University of North Carolina at Chapel Hill (USA, February 2010) * Visiting Professor, Fondazione Istituto Italiano di Tecnologia, Genoa (EU & Italy, October 2012) * Honorary Professor, Nanjing University (China, June 2014) * Molecular Science Frontier Lecture, Institute of Chemistry of the Chinese Academy of Sciences, Beijing (China, March 2016) * Visiting Scientist and Lecturer, University of Oslo (Norway, May 2016) * Visiting Professor, Institute of Chemical Research of Catalonia (ICIQ), Tarragona (Spain, November 2016).

4. Main Areas of Research

Christian Amatore's research mainly aims to introduce innovative theoretical concepts and experimental methods in molecular and analytical electrochemistry per se, although also mainly aimed to develop and take advantage of pioneering approaches for the investigation of mechanistic issues in the following three main areas:

- o *Development of ultramicro- and nanoelectrodes and their applications in nanosciences, and investigations of non-electrochemical homogeneous mechanisms, e.g., single electron transfer catalysis,*

- o *Mechanisms of homogeneous transition metal catalysis and cross-coupling reaction by transition metal complexes (Ni, Pd),*
- o *Biological applications of micro- and nanoelectrodes at the single cell level: vesicular neurotransmitter exocytosis; oxidative stress in tissues.*

5. Honours and Awards

- o **Knighthoods in French Republic Orders:** Knight in The Order of Merit (*French Republic*, 2006) * Knight in The Order of The Legion of Honour (*French Republic*, 2010) * Knight in The Order of The Academic Palms (*French Republic*, 2011) * Officer in The Order of The Academic Palms (*French Republic*, 2019) * Commander of The Order of The Academic Palms (*French Republic*, 2023).
- o **Academies of Sciences. National:** French Academy of Sciences, Corresponding Member (1996) * French Academy of Sciences, Full Member (2002) * Catholic Academy of France, Full Member (2017) * Lorraine Academy of Sciences, Honorary Member (2020). **Other Academies of Sciences:** European Academy (Academia Europaea), Full Member (2011) * Chinese Academy of Sciences, Foreign Member (2013) * World Academy of Sciences (TWAS), Full Member (2013) * Brazilian Academy of Sciences, Foreign Member (2017) * Portuguese Academy of Sciences, Foreign Member (2022) * International Committee of the Chinese Academy of Medical Sciences (2024).
- o **Scientific Medals and Awards:** La Caze Prize (*The French Academy of Sciences*, 1992) * Silver Award (CNRS, 1993) * JSPS Visiting Professor (*The Japan Society for the Promotion of Science*, 1997) * Pittsburgh Conference Lecturer (*Pittsburgh University*, 2000) * Debye Distinguished Lecturer (*Cornell University*, 2001) * The Charles N. Reilley Award (*Society for ElectroAnalytical Chemistry*, 2002) * Nanqiang Lecturer (*Xiamen University*, 2004) * Louis de Broglie Medal (*Accademia dei Lincei*, 2005) * Hinshelwood Lecturer (*The University of Oxford*, 2005) * Welch Foundation International Lecturer (*Welch Foundation, Houston, USA*, 2005) * Bourke Medal, (*The Royal Society of Chemistry*, 2006) * Luigi Galvani Medal (*The Italian Chemical Society*, 2007) * Michael Faraday Medal (*The Royal Society of Chemistry*, 2007) * Durham Lecturer of the Year (*Durham University*, 2008) * International Lecturer of the Year (*The Romanian Academy of Sciences*, 2009) * Bridiscka Lecture Award, (Heyrovsky Institute, 2014) * Centennial Texas Lecturer (Austin, 2013) * Distinguished Lecturer of the Year (*Hubei Province, China*, 2013) * International Lecturer of the Year (*The Royal Society*, 2013) * Breyer Medal (*The Royal Australian Chemical Institute*, 2014) * Heyrovsky Lecture Award (*Charles University*, 2015) * G.F. Smith Award Memorial Lecturer (*Urbana Champaign*, 2015) * The BCEIA Distinguished Award (*Beijing Conference and Exhibition on Instrumental Analysis*, 2015) * Volta Medal (*The Electrochemical Society*, 2016) * Odd Hassel Lecturer (University of Oslo, Norway, 2016) * Honorary Fellow (*Chemistry Europe*, 2016) * The Electrochemical Society Lecturer (*The Electrochemical Society*, 2016) * The Career Excellence Award (*The Electrochemical Society*, 2017) * Knight Memorial Lecturer (*Akron University*, 2017) * Costin D. Nenitescu Medal (*Romanian Society of Chemistry*, 2017) * Jaroslav Heyrovsky Medal (*The International Society of Electrochemistry*, 2019) * Grotius Medal (*Lithuanian Chemical Society*, 2018) * Lavoisier Medal (*French Chemical Society*, 2019) * Gold Medal (*The International Society of Electrochemistry & Electrochimica Acta*, 2021) * Coetzee Lecturer (Pittsburgh University, USA, 2023) * Friendship Award (People Republic of China, 2024).
- o **Fellowships awarded by Learned Societies:** Fellow of the International Society of Electrochemistry (2006) * Fellow of the Royal Society of Chemistry (2008) * Honorary Fellow of the Chinese Chemical Society (2009) * Honorary Member of the Israeli Chemical Society (2009) * Honorary Fellow of The Royal Society of Chemistry (2010) * Honorary ChemPubSoc Fellow (2015) * Distinguished Fellow of The French Chemical Society (2015) * Fellow of The Electrochemical Society (2017) * Honorary Fellow of Chemistry Europe (2015).
- o **Honoris Causa Doctorates:** Kharkov National University of Radio-Electronics, Kharkov, Ukraine (2005) * Universitatea Politehnica, Bucharest, Romania (2017) * University "Luliu Hatieganu" of Cluj-Napoca, Cluj-Napoca, Romania (2018).

6. Editorial Activities in the service of International Scientific Journals with Peer-reviewing associated with Learned Societies

- o **as Editor:** *Journal of Electroanalytical Chemistry* (1997-2009) * *ChemPhysChem* (2010-2018) * *Science China (Chinese Academy of Sciences & National Natural Science Foundation of China*, since 2010) .
- o **as Member of Editorial boards:** *Bulletin de la Societe Chimique de France* (1993-1998) * *Journal de Chimie Physique* (1993-1999) * *Comptes Rendus de Chimie de l'Academie des Sciences* (since 1996) * *New Journal of Chemistry* (1998-2002) * *Portugaliae Electrochimica Acta* (since 1999) * *ChemPhysChem* (2000 to 2017) * ARKIVOC (open access & on-line, since 2003) * *Journal of the Algerian Chemical Society* (since 2004) * *Analytical Chemistry (ACS)*, 2006-2010) * *Journal of Electrochemistry (Chinese Society of Electrochemistry*, since 2010) * *Nano-Bio-Analysis* (on-line publication, since 2010) * *Science China (Chinese Academy of Sciences & National Natural Science Foundation of China*, since 2010) * *ChemElectroChem* (since 2013) * *Research (American Association for the Advancement of Science & China Association for Science and Technology*, since 2021).

7. Scientific Organizing and Collective Responsibilities (French and Foreign)

- 1993-2010 : Founder and first Director of the Research Unit PASTEUR (UMR 8640, CNRS, ENS and UPMC),
- 1995-1997 : vice-President of the Physical Chemistry Division of the French Chemical Society,
- 1997-1999 : President of the Physical Chemistry Division of the French Chemical Society,
- 1997-present : Member of the Committee for Developing Countries (COPEL) of the French Academy of Sciences,
- 1999-2006 : Dean of the Department of Chemistry of ENS (former Louis Pasteur's chair),
- 2001-2010 : Founder and Director of the Doctoral School of Physicochemical and Analytical Sciences of Central Paris,

- 2002-2012 : Founder and first Director of the Institute of Chemical Analytical Sciences of Central Paris,
 2004-2019 : President of the Continental European Chemical Societies Consortium for *ChemPhysChem*,
 2005-2012 : Chairman of the Scientific Council for Advanced Scientific Awareness of the French Department of Defense,
 2005-2010 : Chairman of the Chemistry Section of the French Academy of Sciences,
 2006-2008 : Chairman of the Division of *Molecular Electrochemistry* of the International Society of Electrochemistry,
 2006-2015 : co-Chairman of the CNRS International Laboratory “*XiamENS*” (ENS-CNRS-University of Xiamen, China; co-Chair: Prof. Acad. Zhongqun Tian (University of Xiamen),
 2009-2013 : vice-President of the International Society of Electrochemistry,
 2010-2014 : Member of the International Jury for the L’Oréal-UNESCO Prize “*For Women in Science*”,
 2011-2015 : vice-President of the French Academy of Sciences for Scientific Education and Advanced Training,
 2013-2018 : President (successively Elect, in Charge, and Past) of the International Society of Electrochemistry,
 2015-2023 : co-Chairman of the CNRS International Laboratory “*NanoBioCatEchem*” (France: ENS-CNRS & University of Rennes / China: Universities of Xiamen & Wuhan, China); co-Chair for China: Prof. Acad. Zhongqun Tian (Xiamen),
 2015-2017 : President of the International Jury for the L’Oréal-UNESCO Prize “*For Women in Science*”.

8. Scientific Advisory Boards and Scientific Councils (French and Foreign)

• Past appointments

- 2002-2007 : Advisory Board of the Heyrovsky Institute, Prague, Czech Republic,
 2002-2008 : Advisory Board of the Ecole Normale Supérieure of Cachan, Paris,
 2005-2013 : Scientific Council of the Institute of the Arabic World, Paris,
 2005-2017 : Chairman of several Evaluation Committees of Chemical Sciences, French Ministry of Research,
 2005-2021 : Scientific Council of the National Conservatory of Arts and Crafts, Paris,
 2006-2013 : Member of the Engineering and Physical Sciences Research Council College (*EPSRC*, UK),
 2006-2009 : Member of the *Haut Conseil de la Science et de la Technologie* (High Council composed of 20 Members appointed to directly advise The Presidents of The French Republic; Amatore served under Presidents Jacques Chirac and then Nicolas Sarkozy),
 2008 : Board of Electors, University of Oxford,
 2012-2015 : Member of Universciences, the French National Council for Scientific Culture,
 2015 : Chairman of the Evaluation Committee for Chemical Sciences, Czech Academy of Sciences, Czech Republic,
 2015-2023 : Administrator of the National Conservatory of Arts and Crafts, Paris,
 2021-2025 : Member of the Scientific Board advising UNESCO for the International Basic Science Programme (IBSP).

• Present appointments

- 2000-present : Member of the Committee for The Developing Countries (COPEDE) of The French Academy of Sciences,
 2003-present : Advisory Board of the Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China,
 2004-present : College of Experts of The International Union of Pure and Applied Chemistry (IUPAC),
 2005-present : Advisory Board of the Fudan University, China,
 2006-present : Scientific Council of the “*International Foundation of Maison de la Chimie*”, Paris,
 2007-present : Advisory Board of the State Key Laboratory PCOSS, Xiamen, China,
 2007-present : Administrator of the “*International Foundation of Maison de la Chimie*”, Paris,
 2014-present : Member of the International Advisory Board of the *iChem* Research Consortium, China,
 2015-present : Member of the International Advisory Board of the Brazilian National Bio-Analytical Laboratory,
 2023-present : President of the Scientific Council of the NGO “Association Francophone d’Appui à la Réalisation de la Grande Muraille Verte (AFAR-GMV)”.

Christian Amatore

Short biography (January 2025)

Christian Amatore, 73, is Professor Emeritus of CNRS and ENS and Distinguished Professor of Xiamen University, China. He obtained his Habilitation at the University Paris Diderot under the supervision of Prof. Saveant before moving to the University of Indiana at Bloomington. He returned to France at the CNRS and ENS where he held the former position of Louis Pasteur. He is a member of the French Academy of Sciences, a member of the Academia Europaea, a member of the Third World Academy of Sciences, a foreign member of the Chinese Academy of Sciences, the Brazilian Academy of Sciences, and the Portuguese Academy of Sciences, and a member of the International Committee of the Chinese Academy of Medical Sciences, an honorary fellow of the Royal Society of Chemistry and of the Chinese Chemical Society, an honorary member of the Israeli Chemical Society, a Distinguished Scientist of the French Chemical Society, and a fellow of the ISE and ECS. He served as Vice President and President of the ISE and was one of the twenty members of the French High Council of Science and Technology, which advised the Presidents of the French Republic. He was knighted by the French Republic in the Orders of Merit and the Legion of Honor, and was elevated to the dignity of Commander of the Order of Academic Palms. He has received many important national and international awards and medals, including the Silver Medal of the CNRS, the Gold Medal of the International Society of Electrochemistry, the Plenary Lecturer Award of the Electrochemical Society, the de Broglie Award of the Lincei, the Nanqiang Award of Xiamen University, the Faraday Medal of the Royal Society of Chemistry, the Lavoisier Medal of the French Chemical Society, and the Friendship Award of the Chinese People Republic.

He has published 520 primary publications in top international peer-reviewed journals, accumulating more than 30,450 citations with an h-index of 90 and an i10-index of 450 (according to ISI Web of Science, January 2025) or more than 39,200 citations with an h-index of 102 and an i10-index of 479 (according to Google Scholar, January 2025), with an average citation rate of more than 1,250 per year (ISI-WoS) or 1,600 (GS) over the last 10 years.



Biography

1) Brief biographical sketch

Professor Christian Amatore, was born in December 1951 from a recently immigrated modest family (Sicilian by his father, Swedish by his mother) and spent his childhood in Algeria in several garrison towns where his father was a non-commissioned officer of the Foreign Legion. His scientific and mathematical propensities were soon remarked by his school teachers who convinced his parents to encourage him to pursue his studies to middle and then high schools. His talents for the sciences continued to develop until he was accepted as an undergraduate student at the Ecole Normale Supérieure (ENS), being then one of the 11 best French students of the year for Physics and Chemistry. Since its creation, ENS is the most selective French centre for higher education and academic research. At 19, endowed with this important Sesame, he decided to continue his master's studies along all these fields and mathematics while selecting chemistry and chemical physics as his major curricula.

Following his Ph.D. and Habilitation (*Doctorat d'Etat ès Sciences*) obtained in 1979 from the University Paris Diderot under the guidance of *Professor Jean-Michel Savéant*, he was recruited by the *Centre National de la Recherche Scientifique* (CNRS) as a Research Associate Professor in Physical Chemistry. He then moved to Indiana University at Bloomington where he worked as a CNRS-NSF Assistant Professor with *Professor Jay K. Kochi* on single electron transfer (SET) activation of molecules and SET-catalysis in organometallic and organic chemistry. He returned to France in 1983 when offered a permanent CNRS-ENS Research Professor position at ENS to set up a fully innovative laboratory aimed to explore the possible connection between molecular electrochemistry and central mechanistic issues in organic and organometallic chemistry.

His seminal theoretical and experimental successful contributions in this original research direction quickly gained him recognition by the French and international communities. He was thus elected corresponding member of the French Academy of Sciences in 1996, being the youngest in all fields except for mathematics. In 2002, he was elected as Full Member of the French Academy of Sciences and became Chairman of its Chemical section in 2005. He then served during 4 years as a vice-President in charge of Education and Advanced Training and continues to serve now in its Committee for the Developing Countries (COPEDE).

The rest is history, as is fully documented in his Curriculum Vitae. At the age of 69, Christian Amatore remains fully active in research, being now Emeritus Professor in CNRS and ENS, Distinguished Professor of the University of Xiamen, Fujian, China, and still chairs the most recent of the two CNRS International Laboratories he has created at the instigation of CNRS.

2) Résumé of Amatore's main research achievements

Even if, throughout his career, Christian Amatore felt obliged to devote a significant part of his efforts to creating and organizing Laboratories, creating one Doctoral School and a Federation, advising or animating many instance in the French Academy of Sciences as well in French or international scientific organizations, his most fundamental passion lies in scientific creative research, being entirely driven by the "*pleasure of finding things out*" to discover and stimulate new scientific avenues.

To this day, Christian Amatore is recognized around the world as one of the very few most prominent electrochemists of his generation but his reputation extends far beyond this field. His talent for designing and implementing imaginative approaches have led him to successfully open and explore many seemingly unrelated issues that cross over traditional borders between natural sciences. He did so by introducing innovative effective concepts that created original approaches leading to radically new views. Amatore thus developed outstanding theoretical and instrumental concepts in electrochemistry which extended the traditional scopes and frontiers of his discipline leading to an impressive series of extremely important consequences in organic and organometallic catalysis or in cell biology, as is made clear in the following, and reaching as far as art and archaeology as evident by his world-renowned work on of "*Horus' Oudjat*", the antic Egyptian black make-up worn not only by Pharaohs but by the whole Egyptian population for its "*magical*" antibacterial properties.

His contributions, involving mechanistic studies of chemical and electron transfer catalysis, theoretical and experimental pioneering the developments of microelectrodes within a long partnership with R. Mark Wightman (now, Emeritus Professor at The University of North Carolina at Chapel Hill, USA)

are legendary. In the hands of Amatore, electrochemical approaches could thus reach the nanosecond-timescale in voltammetry, nanometric diffusion layers, access to poorly conducting media, or could be specifically tailored to fit (bio)physicochemical investigations at the micro- and nano-scale level to detect and quantify small molecules of extreme importance for biological functions in single cells (*vide infra*). These achievements have seeded and stimulated numerous active researches areas in many excellent laboratories around the world and were recognized by his successive elections to several Academies of Sciences around the World and by prestigious Fellowships, awards and medals, as documented in detail in his Curriculum Vitae. For example, in 2010, he was elected Honorary Fellow of the Royal Society of Chemistry, an honour shared at the time only with a single other electrochemist and with three other French chemists, amongst them two Nobel Prize-winners.

New concepts supported by a series of elegant systematic mechanistic organometallic studies allowed him to firmly establish for the first time the detailed mechanisms of the extremely important nickel- (*Kumada-Corriu*) or palladium-catalysed (*Stille, Negishi, Miyaura-Suzuki and Heck reactions*) carbon-carbon couplings which belong to a class of pre-eminent reactions in the homogenous catalysis of key steps of fine-chemicals syntheses (Heck, Negishi, and Suzuki were awarded the 2010 Nobel Prize in Chemistry for “*palladium-catalysed cross couplings in organic synthesis*”). Amatore's works not only established the unifying mechanistic backbone of all of these reactions, but also explained why their high specificity and exquisite sensitivity are finely modulated by the nature of the exact precursors of catalytic palladium complexes and their preparation. His mechanisms, now disclosed in the advanced textbooks in the field, have offered simple experimental rules for understanding and optimizing most homogeneous palladium-catalysed reactions, e.g., by adding unexpected adjuvants such as chloride ions. This series of works led him to understand “*What Makes a Good Catalytic Cycle?*” and propose a general, although initially counter-intuitive, strategy to successfully optimize a wide variety of catalytic cycles.

Although he had well prepared himself through his excellent theoretical works on the electrochemical and physical properties ultramicroelectrodes — extended now to nanoelectrodes — one can't fail to be impressed by his careful studies about the quantitative kinetic analyses of secretion of small bioactive molecules from single living cells or tissues. He is achieving these spectacular feats mostly to apprehend the exact mechanisms of two important biological issues occurring at the cellular level. One concerns the fine coupling of soft matter with biological functions that drive kinetically the final stages of neurotransmitters release by endocrine cells or inside synaptic clefts of functional neuronal or neuromuscular junctions. The second is aimed to establishing the very nature of primary events giving rise to the formation of reactive oxygen and nitrogen species during oxidative stress conditions, for example, inside breast cells at different cancerous stages (normal, cancerous and metastatic) or inside macrophages phagolysosomes during phagocytosis. Through this convergent approach joining two distinct biological events, Christian Amatore could unambiguously characterize and quantify for the first time the molecular nature of the fine interactive coupling, commanded by nitric oxide emitted by active neurons to increase their blood supply by local capillaries vasodilatation in the brain. He thus solved a fundamental and essential brain mechanism postulated more than 180 years ago but which could never be established for lack of sufficiently local, sensitive and rapid analytical methods while it underpins today the monitoring of the brain activity by functional MRI. The talk he gave in 2013 at The Royal Society when he was invited to deliver the *International Lecture of the Year* was about this extraordinary feat. As soon as it may permeate through the cultural boundaries between scientific fields this research will undoubtedly impact several medical applications such as biochemical control of functional hyperaemia and especially of disorders that induce brain strokes or ischemia, but may also explain the initiation of Alzheimer disease. Indeed, Amatore's results demonstrate that in the presence of copper amyloid β and ascorbic acid, the simultaneous existence of important locally coupled fluxes of oxygen and nitric oxide near active neurons irremediably supplies peroxynitrite, i.e., a molecular scissor prone to rapidly poke a series of pores through neurons' membranes. His work show indeed how strongly coupled are the phenomena of oxidative stress and neurotransmission at the very basic cellular level in the brain. Amatore is now on the way to transfer this knowledge and his imaginative cleverness within the framework of a small company to adapt his methods and concepts in order to detect fluctuations of hydrogen peroxide, nitrite ions and nitric oxide in the sweat of cardiovascular patients by a non-invasive microfluidic electrochemical patch.

To date (June 4th, 2023), Amatore's research has resulted in the publication of 520 primary research articles in international journals with peer-review, several book chapters, 10 French Habilitation theses, 59 Ph.D. defended in France and 7 in foreign countries, 8 patents and more than 300 distinguished,

award-winning, named, opening and plenary conferences. His works have been cited ca. 58.6 times each on average, with a total of 30,450 citations, an *h*-index of 89, an *i10*-index of 450 and a citation rate greater than approx. 1,250 citations per year over the past eight years according to the Clarivate-ISI Web of Science database. The Scopus database reports essentially similar statistical analyses. Google Scholar which also includes books, proceedings and doctorates or master's thesis manuscripts, etc., in addition to peer-reviewed scientific journals, reports that on the same date his works were cited ca. 70.2 times each on average, with more than 35,200 citations (67.7 per paper) , an *h*-index of 102, an *i10*-index of 479 and a citation rate greater than ca. 1,600 citations per year over the past eight years, thus emphasizing the great importance of his researches for young scientists still in their scientific development, which gives him a particular joy because one of the achievements that has counted him the most besides "*finding things out*" is his teaching and supervision of students.

Nonetheless, It is a pity that these impressive researches that span from the organometallic and organic chemical catalysis to two key cellular mechanisms that could be imagined and achieved thanks to Amatore's masterful invention of new conceptual and experimental electrochemical approaches could not find their way to the top international journals. Comically, his work on the antic Egyptian make-up was later publicized and commented favourably by these high-class journals and reported by thousands newspapers aimed to the general public all around the world although it was rejected without review by these very same journals when submitted.

3) Organizing and collective inputs for research

Beyond his recognized talent and successes in pure research, Amatore has demonstrated his profound investment for creating and organizing scientific structures which contribute today through many facets to the visibility of France in electrochemistry as well as in modern avenues in physical, analytical and molecular chemistry for catalysis and cellular biology.

Since his nomination at ENS as a CNRS Research Professor at the exceptional age of 33, he started building up a research team which, within a few years, established itself as one of the most visible centres worldwide for molecular electrochemistry. Thanks to his ecumenical views rooted on a rare extended scientific knowledge, his recognized scientific talent and his charisma, he was asked by the ENS, the CNRS and the French Ministry of Research to accept the former prestigious Louis Pasteur's position at the ENS. He could then attract there major research teams but also young promising researchers whom he helped creating and organizing altogether a research centre integrating several chemical fields from theoretical physical and analytical chemistry to bio-organic chemistry with a particular emphasis on chemical issues of importance in many functions of life. Under Amatore's guidance and continuous efforts, this multidisciplinary laboratory gave back to the Department of Chemistry of ENS its exceptional visibility, and could contribute to the foundation of one of the most successful French doctoral school and a major French research federation in chemistry. Both have contributed to a complete revival of physical and analytical chemistry in Central Paris by helping to coordinate their objectives and research efforts towards major modern issues. This recognized scientific centre provides a crucial input in our modern understanding of molecular reactivity at the nano and micro dimensions which govern green chemistry and cellular biology. Based on these successes CNRS asked him to create a second international laboratory of CNRS in China, "*NanoBioCatEchem*", linking CNRS, ENS, Rennes, Xiamen and Wuhan universities.

Today, considering that his role in leading this scientific re-foundation of physical and analytical chemistry in Central Paris was accomplished, Amatore spontaneously preferred to ask younger scientists to pursue this task with their own inspiration so as to focus his own efforts onto on other issues that he believes are equally important for the continuation of science in future. This involved for example the training of young pupils, in particular by helping primary school and college teachers to develop scientific content likely to interest, promote and attract pupils, especially young girls, to science or to help the often difficult transition from high school to university first degree courses for talented but not sufficiently well prepared students. Before he became Emeritus, his last but not least involvement concerned his membership within the High Council of Science and Technology; there, with his nineteen distinguished colleagues, he advised the French governments on scientific issues for the benefice of France and its science. In the same vein, let us mention that he has just accepted an appointment by UNESCO as a member of the Scientific Board of its International Basic Sciences Program.