**STEFANO STRANGES, Associate Professor, Ph.D. - C.V.**

**2012-present**: Prof. Stefano Stranges (SS) is Associate Professor of *Chemistry and General Chemistry* (SSD CHIM/03), at the Department of Chemistry and Drug Technologies (CTF) of the university of Sapienza in Rome, (Italy). He is lecturer of the courses *Advanced Inorganic Chemistry* and *General Chemistry,* respectively at the Chemistry and Physics departments of Sapienza.

**2019-present:** member of the panel of docents and lecturer of the International PhD Course *Promotion of health and well-being: from drug to food,* at the CTF department of Sapienza.

**2017**: National Scientific Habilitation (ASN) for Full Professoship, settore concorsuale 03/B1, "Fondamenti delle scienze Chimiche e sistemi inorganici", SSD CHIM/03 – Chimica generale ed inorganica.

**2014**: National Scientific Habilitation (ASN) for Full Professoship, settore concorsuale 03/A2, "Modelli e metodologie per le scienze Chimiche”, SSD CHIM/02 – Chimica Fisica.

**2010-present:** scientific director of the PES (PhotoElectron Spectroscopy) laboratory at the Depatment of Chemistry of Sapienza.

**1995:** member of CIRS (Consorzio Interuniversitario per le applicazioni chimiche della Radiazione di Sincrotrone), with the role of scientist representing the University of Rome "Sapienza" in the construction and managing the Gas Phase Photoemission beamline (GAPH) of the Elettra Synchrotron Light Laboratory.

**1995** (2 months): visiting scientist at the Department of Chemistry of the University of Berkeley (CA, USA), working in the group of Prof. Y. T. Lee (Nobel Prize award in Chemistry, 1986) and Prof. A. Suits. The activity was focused on exploiting the opportunities offered by seeded jet sources of free radicals and ozone molecules.

**1995:** winner of a Post-Doc scholarship of the European Exchange Program (4 months) provided by the agreement between the Royal Society (GB) and Accademia Nazionale dei Lincei (IT), at the University of Southampton (GB), working in the of Prof. J. M. Dyke, and with Prof. J. B. West at the Daresbury Synchrotron Center in Warrington (GB). The spectroscopic studies with SR were focused on the electronic properties of short-lived species of interest in atmospheric and plasma chemistry.

**1994:** winner of an Italian National Research Council (CNR) Post-Doc scholarshipfor foreign countries (8 months) working at the University of Southampton and the Daresbury Synchrotron Center with Prof. J. M. Dyke and Prof. J. B.West. The activity was devoted to the study of transient species in the gas phase by SR-based photoelectron spectroscopies.

**1992-2012:** Research staff member at the Department of Chemistry of the University of Sapienza.

**1991-1992:** winner of a CNR Post-Doc scholarshipfor foreign countries (11months). The research activity done at the L.U.R.E. synchrotron center (Laboratoire pour l'Utilisation du Rayonnement Electromagnétique) of Orsay (Paris, FR), working with the group of Prof. M. Y. Adam. The activity was dedicated to study the electronic structure and the photoinization energetics and dynamics of atomic and molecular species in the gas phase.

**1991-present:** Member of the Research Group of the Gas Phase photoemission (GAPH) beamline at the Elettra Synchrotron Light Laboratory (Trieste, Italy) since its construction (1992), he is scientific responsible for the experimental AR-PES (Angle Resolved PhotoElectron Spectroscopy) end-station which is operational on GAPH. He is also scientific responsible for the ARPES-TPES experimental end-station at the IOM-CNR TASC Laboratory for research activity at Elettra beamlines GAPH (future MOST) and CIPO (Circular polarization beamline) in Trieste (Italy), optimized for SR studies of radicals and transient species generated by MW plasma. SS is partner of Elettra Laboratory, for the GAPH SR beamline, and more recently also partner of Elettra for the LDM (Low Density Matter) beamline of the Free Electron Laser FERMI Laboratory, with the specific task of developing free radical pulsed sources (seeded jet *flash pyrolysis* source), in collaboration with R. Richter, K. C. Prince, C Callegari and his team (Sincrotrone Trieste), and M. Alagia of IOM-CNR.

**1992-present:** scientist associated to the TASC Laboratory of IOM-CNR in Trieste with research assignment qualification.

**1991**: PhD degree in Chemistry, University of Sapienza, Rome (Italy), thesis’ title *Studio della struttura elettronica di sistemi in fase gassosa mediante tecniche di fotoemissione*. A two-year research activity was performed at the L.U.R.E. synchrotron center (Laboratoire pour l'Utilisation du Rayonnement Electromagnétique) of Orsay (Paris, FR), working with the group of Prof. M. Y. Adam.

**1986** (June): degree in Chemistry (5 years laurea course), 110/110 cum laude, at the University of Sapienza.

SS acted as supervisor of students’ thesis:

**2016-2019:** PhD thesis’ supervisor (Dr. Luca Schio), for the Doctoral Course *Modelli matematici per l'Ingegneria, Elettromagnetismo e le Nanoscienze*, at the Sapienza University of Rome, thesis’ title “*Studies of molecular photoionization of simple systems by advanced photon sources*”. The research activity was done at the Elettra Synchrotron Light Laboratory and at the Department of Physics of the University of Gothenburg (Sweden).

**1994-present**: supervisor of various thesis in Chemistry at both levels, Bechelor (Laurea Triennale) and Master (Laurea Magistrale).

SS is co-author of 138 full articles, with 2515 citations, and h-index=29 (Scopus, January 2021) - ORCID ID: orcid.org/0000-0002-9057-5072

The full list of publications in peer-reviewed international journals is available at:

<https://www.scopus.com/cto2/main.uri?ctoId=CTODS_1275647248&authors=7003835010&origin=AuthorNamesListand>

The scientific interests of SS mainly concern the study of photoemission processes in atomic and molecular species in the gas phase, including free radicals, reaction intermediates, high temperature vapours, and clusters, with particular regard to developing and using novel methodologies based on synchrotron radiation (SR), with the aim of investigating electronic properties of highly reactive (short-lived) species, and focus on their potential interest and use in material and applied sciences. In 2002, SS started developing SR-based experimental methodologies to study electron properties of chiral free molecules by the so-called PECD (PhotoElectron Circular Dichroism) spectroscopy, in collaboration with CNR researchers participating to the present project (N. Zema and co-workers). Worth mentioning is the recent development of a very sensitive 2D fast Position Sensitive electron detection at the ARPES-TPES end station in collaboration with G. Cautero and co-workers of Sincrotrone Trieste and IOM-CNR.

Invited Lecturer at International and Italian School) on applications of SR in Chemistry, he worked at the LURE synchrotron Center (Orsay, France, 3 years) where he developed the AR-PES end station for the GAPH beamline of the Elettra Italian synchrotron. He collaborated with Prof. J.M. Dyke's group (Southampton, GB, 1.5 years) and Prof. J. B. West in exploiting an experimental SR end station with a specifically designed MW plasma reactor to study transient species by PES at the Daresbury synchrotron Center (GB).

SS acted as invited peer reviewer by international journals in the fields of Chemistry and Physics (J. Phys. Chem. Lett., J. Chem. Phys, Science, ChemPhysChem, Chem. Phys. Lett., Chirality, Eur. Phys. J. D, J. Electron Spec. Relat. Phenom., Surf. Sci. Lett.), as scientific reviewer by the European Science Fundation (ESF, EUROCORS Project), as scientific evaluator by MIUR for projects in the "Futuro in ricerca 2013" referring to the PE-Physical Sciences and Engineering ERC sector.

- SS has been scientific coordinator of Research Units in granted MIUR projects:

PRIN2009: Title project “*Generazione e caretterizzazione con metodi spettroscopici e chimico-fisici avanzati di specie gassose reattive di rilievo nella chimica dell’atmosfera, in biochimica e nelle nanotecnologie*”;

PRIN2003: Title project “*Struttura, dinamica ed energetica di molecole e cluster chirali, neutri e ionici, in fase gassosa*”;

PRIN1998: Title Project “*Energetica e dinamica dei processi di fotoemissione di molecole gassose prodotte ad alta temperatura*”.

- SS has also been participant to other granted PRIN, FIRB, SIR projects, as well as Ateneo Projects, as scientific coordinator and member of research units, funded by the Sapienza University of Rome.

**1995-2010:** SS gave a significant number of contributions to International Conferences and Workshops. Specifically, in the period 1995-2010 he gave 6 invited plenary lectures, 7 invited talks, 3 invited hot topic lectures, and 7 oral contributions. A short selection of more recent contributions is given below.

**S. Stranges**

“*Upgrade of current experimental methods to benefit from the new Elettra 2.0 photon source in multi-particle detection spectroscopies, and in studying highly reactive materials*”,

MOST@Elettra 2.0 Workshop, Trieste, 20-21 January 2020 (invited)

**S. Stranges**

*“Photoionization and dissociation of highly reactive species by synchrotron radiation”*

The 2nd International Conference on Soft Chemical Ionization Mass Spectrometry and its Application to Trace Gas Analysis, 10-13 June 2019, Prague, Czech Republic (invited)

**S. Stranges,** M. Alagia, R. Richter, V. Carravetta, A. Ponzi, L. Schio, S. Falcinelli and F. Pirani,

“*Perspectives in studying Free radical-Surface interaction by synchrotron radiation*”

Workshop MIPOMat- Innovative Surfaces and Materials , August 2gt1t\_31sr 2016, Primosten, Croatia, ([http://mipomat-workshop.irb.hr/), (](http://mipomat-workshop.irb.hr/%29%2C%20%28d)plenary)

**S. Stranges,** M. Alagia, L. Schio, D. Toffoli, P. Decleva, S. Falcinelli, O. Rebrov, V. Zhaunerchyk, M. Larsson, N. Zema, S. Turchini, D. Catone,

“*Unravelling the valence electronic structure of the epichlorohydrin chiral molecule*”

CECAM (Centre Européen de Calcul Atomique et Moléculaire) Workshop: "Molecular chirality from a physical and theoretical chemistry perspective", 10th of October 2016, EPFL, Lausanne, Switzerland, (invited)