Curriculum Vitae of Dr. Tasinato Nicola

Dr. Nicola Tasinato awarded: in 2010 the Ph.D. in Chemical Sciences with mention of “Doctor Europaeus” at University Ca' Foscari Venezia; in 2005 the master’s degree in Chemistry and Environmental Compatibility (110/110 summa com laude) at University Ca' Foscari Venezia; in 2003 the bachelor’s degree in Chemistry (110/110 summa com laude) at University Ca' Foscari Venezia; in 2000 the diploma of Computer Scientist (90/100) at I.T.I.S. C. Zuccante.

From January 2010 to April 2012, he had a post-doctoral position at University Ca' Foscari Venezia concerning the *Study of line profiles and cross sections of atmospheric and astrophysical relevant molecules*. From June 2012 to June 2014, he held a postdoctoral position regarding *Medium and high resolution IR spectroscopy of atmospheric and astrophysical relevant molecules* at University Ca' Foscari Venezia. From June 2014 to March 2016 he held a post-doctoral position at University Ca' Foscari Venezia on the topic "*Infrared spectroscopy and computational models of compounds with atmospheric and astrophysical relevance*".

In 2008 and 2009, he was visiting researcher at the Strathclyde University of Glasgow in the Quantum Cascade Laser spectroscopy group of Proff. Geoffrey Duxbury and Nigel Langford. During this period, the research activity dealt with the study of collisional processes and electromagnetic radiation – matter interaction by employing the frequency down-chirped radiation emitted by a quantum cascade laser spectrometer used in the intra-pulse method.

In 2013, he was visiting researcher at the Mulliken Centre for Theoretical Chemistry (University of Bonn) in the group of Prof. Stefan Grimme. The research activity dealt with the study of van der Waals and hydrogen-bonded dimers by means of the dispersion corrected DFT-D3 scheme.

At present, he is associate researcher at Scuola Normale Superiore of Pisa.

His research interests focus on molecular spectroscopy (experimental and computational), computational chemistry and software development. The scientific research mainly covers the following topics:

(1) Development and application of accurate, cost-effective computational strategies and tools for the simulation of structural, spectroscopic and energetic properties of small and medium size molecular systems either in the gas or condensed phase;

(2) Analysis of spectral line-shapes for obtaining parameters for quantitative remote sensing determinations and for understanding collisional relaxation processes;

(2) Analysis of high-resolution spectra in order to model ro-vibrational Hamiltonians from which predicting and simulating the spectra of the target species.

(3) Study of medium resolution IR spectra and determination of absorption cross sections, coupled to quantum mechanical calculations, for determining radiative forcing and global warming potential parameters, as well as for understanding vibrational mixing effects.

(4) Investigation of the adsorption of molecules on surfaces by Diffuse Reflectance Infrared Fourier Transform spectroscopy and quantum chemical calculations, to get information on the adsorbate-substrate interactions as the first step involved in the (photo-) catalytic reactivity promoted by the surface.

(5) Study of molecular complexes featuring non-covalent interactions by means of computational quantum chemistry.

(6) Development of software for data analysis and data fitting.

He has 36 published papers on international peer-reviewed journals and several contributions to national and international conferences.

Concerning the teaching activity, since 2007 until 2010 he has been teaching Exercitations of Mathematics for the degree courses in Chemistry, Industrial Chemistry, Material Sciences and Environmental Sciences at University Ca' Foscari Venezia. During the academic year 2010 - 2011 he has been Professor of Institutions of Mathematics and Exercitations for the degree courses in Chemistry and Industrial Chemistry at Università Ca' Foscari Venezia, and Professor of Exercitations of Mathematics for the degree course in Chemistry and sustainable technologies for the academic year 2011 - 2012. At present, he is teacher of Computational Spectroscopy at Scuola Normale Superiore for the academic year 2016 - 2017 and he is

member of the teaching committe of the PhD in *Methods and Models for Molecular Sciences*, at Scuola Normale Superiore, Pisa, Italy.

Among the obtained acknowledgments there are:

(i) the Josef Plíva Prize awarded at "The 21st International Conference on High Resolution Molecular Spectroscopy"; (ii) the Ca' Foscari award as best young researcher of 2010; (iii) the selection of the article "J. Chem. Phys. **132**, p. 164301" to be published on the Virtual Journal of Ultrafast Science; (iv) the cover page of Molecular Physics vol. **112**, 2014.