Last Update: July 2022

Davide Vanossi

Born in Milan (Italy), July 06, 1968. Italian citizenship.
Family status: married, one child

Education

Ph.D. in Chemistry, University of Modena, Italy (May 1998). Title: *Studio Teorico e Caratterizzazione di Proprietà di Aggregati Molecolari di Tipo Cianinico*. Supervisors: Prof. F. Momicchioli, I. Baraldi (Univ. of Modena).

Degree in Chemistry, University of Modena, Italy. Mark: ***110/110 cum laude*** (December 1992). Title: *Fotofisica e Fotochimica degli Azastilbeni. Ruolo degli stati n-* π^*; Supervisors: Prof. F. Momicchioli, I. Baraldi (Univ. of Modena).

High school degree "maturità tecnica" at Istituto "F. Selmi", Modena, Italy. Mark: ***54/60*** (July 1987).

During the Ph.D. D.V. spent several months at CEA center of Saclay (Paris, France), under the supervision of Prof. P. Milliè, working in the field of molecular interactions and excitonic effects in supra-molecular assemblies.

In 1998 D.V. won a Postdoctoral position, at the Chemistry Department of Modena and Reggio Emilia University, for the *Molecular Modeling of Complex systems*.

In 2001 D.V. became a permanent Researcher in Physical-Chemistry at the Chemistry Department of the Modena and Reggio Emilia University; this position was confirmed in 2004 after the positive evaluation about his research and didactic activities expressed by the National panel presided by Prof. D. Pitea.

D.V. was a member of several PRIN projects and one FIRB project in which he accomplished a prominent role about theoretical and computational issues.

At present D.V. works at the Chemistry and Geological Sciences Department (DSCG) of the Modena and Reggio Emilia University.

Main Research Interests

- Computational quantum chemistry and quantum physics;

- Ab-initio molecular dynamics;

- Molecular interactions in condensed phase;

- Evaluation of exciton effects in supra-molecular assemblies;

- Theoretical excitation energy transfer and electron transfer dynamics;

- Theoretical optical spectroscopy;

- Theoretical electrochemistry at interfaces;

- Quantum mechanical calculation of linear and non-linear optical properties of molecular-based materials;

- Electronic structure and optical properties of molecular crystals in the framework of Many-Body Theory;

- Theoretical analysis of the CISS (Chiral Induced Spin Selectivity) effect;

- Renormalization Group approaches (perturbative and lattice models) for the characterization of second order phase transitions.

- DFPT study of low frequency phonon modes and Raman activity of molecular crystals.

Main Collaborations

Prof. C. Fontanesi *(Dipartimento di Ingegneria "Enzo Ferrari", Università di Modena e Reggio Emilia);*

Dott.ssa V. De Renzi (*Dipartimento di Fisica, Università di Modena e Reggio Emilia*);

Prof. F. Paolucci (*Dipartimento di Chimica "G. Ciamician", Universita` di Bologna*);

Prof. M. Marcaccio (*Dipartimento di Chimica "G. Ciamician", Universita` di Bologna*);

Prof. M. Innocenti (*Diparticmento di Chimica Università di Firenze*);

Dott.ssa Z. A. Krasnaya (*N.D. Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Moscow, Russia*);

Dott. A. S. Tatikolov (*N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia*);

Prof. K. Daasbjerg (*Department of Chemistry, Aahrus University, Denmark*);

Prof. S. U. Pedersen (*Department of Chemistry, Aahrus University, Denmark*);

Dott. G. Lemercier (*Institute of Chimie Moléculaire de Reims, Reims*

Champagne

Ardenne University, Reims, France);

Dott. E. Da Como *(Physics Department, University of Bath, UK)*;

Prof. E. Tosatti (*International School for Advanced Studies (SISSA) and CNR-IOM, Res. Center DEMOCRITOS, Trieste, Italy*);

Dott. A. Vanossi (*CNR-IOM, Nat. Res. Center DEMOCRITOS and International School for Advanced Studies (SISSA), Trieste, Italy*).

Teaching

- Graduate courses for the "***Laurea Triennale in Chimica***":

+ Laboratory of Molecular Spectroscopy;
+ Physical Chemistry II.

- Graduate courses for the "***Laurea Magistrale in Chimica***":

+ Theoretical and Statistical Methods in Physical Chemistry;
+ Theory of Liquids and Solutions;
+ Physical Chemistry of Complex Systems (***current teaching***).

- Graduate course for the "***Laurea Magistrale in Fisica***":

+ Physical Chemistry.

- Graduate course for the "***Laurea Magistrale in Ingegneria***":

+ Fundamentals of Atomic Modeling.

Thesis

- Co-Supervisor of several Thesis for the "Laurea Triennale in Chimica" and for the "Laurea Magistrale in Chimica", Univ. of Modena and Reggio Emilia;

- Co-Supervisor of two Chemistry Ph.D. Thesis, Univ. of Modena and Reggio Emilia.