

CURRICULUM VITAE

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- Nationality: Italian
- Civil status : Married, 1 daughter
- Languages: Italian (Mother language), French (Fluent), English (Fluent)

EDUCATION ET QUALIFICATION

2012-	Assistant professor at “von Karman Institute of Fluid Dynamics”
2007-2012	Senior Research Engineer at “von Karman Institute of Fluid Dynamics”
2002 – 2006	Phd. in Applied Sciences at the “Université Libre de Bruxelles” in collaboration with the “von Karman Institute of Fluid Dynamics” (Belgium).
2001 – 2002 :	Master in Environmental & Applied Fluid Dynamics at the “von Karman Institute of Fluid Dynamics” (Belgium).
2000 – 2001 :	Researcher at M.A.R.S. Center (Italy).
1994 – 1999 :	University degree in Physics at University of Naples “Federico II” taken on 13 th October 1999, 110/110 “cum laude”.

TEACHING ASSIGNEMENTS

- Optical techniques (von Karman Institute, part of 2.5 ECTS)
- Annual seminar of “Optics” for the Research Master students of the von Karman institute.
- Annual seminar of “Transport Phenomena in Liquid Sprays” for the Research Master students of the von Karman institute.

SUPERVISION OF STUDENT PROJECTS, STAGES, MASTER AND PHD THESES

- Supervisor/Co-supervisor of 10 VKI Short Training Program projects.
- Supervisor Co-Supervisor of 1 Final Year Project at the Vrije Universiteit Brussel
- Supervisor Co-Supervisor of 8 Master theses of foreign Universities (France, Greece and Italy), 4 accomplished and 4 ongoing.
- Supervisor Co-supervisor of 7 VKI Research Master projects.
- Supervisor of 2 ongoing PhD thesis (Mr. I. Horvath and Miss A. Simonini)

OTHEER SCIENTIFIC ACTIVITIES

Scientific reviewer of the following international journals :

- ✓ Applied optics,

- ✓ Optics letters,
- ✓ Optics communications
- ✓ Experiments in Fluids.

SEMINAR INVITATION

- Chemical Engineer Department of the University of Florida. Seminar title: *Development of non intrusive optical techniques for two-phase flows and films* (Florida, USA Mai 2010).
- 23^{ème} Journée Thématique de l'AFVL : *L'ensemencement des fluides pour les mesures et les visualisations par techniques laser* (Paris, Mai 2008).
- 21^{ème} Journée Thématique de l'AFVL : *Phénomènes de transport de masse et de chaleur dans les sprays*. (Paris, Mai 2007)

MEMBERSHIP IN HONORARY SOCIETY

Board member of the “Association Francophone de Vélocimétrie Laser”.
Board member of the Belgian ASBL “La Scientothèque”.

ORGANISATION OF CONGRESS

Organisation of the 26^{ème} Journée Thématique de l'AFVL: Applications et Perspectives en microPIV.

Co-organization of the 31^{ème} Journée Thématique de l'AFVL: Les méthodes optiques de caractérisation des écoulements multiphasiques : état de l'art et applications innovantes.

Co-organisation of :

- ✓ 9^{ème} Congrès Francophone de Vélocimétrie Laser (ULB Bruxelles 2004)
- ✓ EUCASS 2007: 2nd European conference for Aerospace Sciences (ULB, Bruxelles 2007)

in collaboration with Prof. M. Riethmuller (VKI) and Prof. G. Degrez (Université Libre de Bruxelles).

RESEARCH INTERESTS

- **Experimental techniques** : optical diagnostics as shadowgraphy, Schlieren, interferometry, IR thermography, Particle Image Velocimetry, Particle Tracking Velocimetry, Laser Doppler Velocimetry, Phase Doppler Interferometer, Mie scattering based techniques (ILIDS, Rainbow, CARS), Spectroscopic techniques (Light and laser extinction), Fluorescence based techniques (Laser Induced Fluorescence - LIF, Planar LIF, Exciplex LIF),
- **Theoretical optics** : Mie scattering theory, Light scattering by non uniform particles, Electromagnetic modelling.
- **Image processing** : Image filtering and optimization process, flow field reconstruction, shape recognition and analysis, ...
- **Data inversion algorithms** : Inverse modelling, inversion algorithm, regularization methods (Tikhonov, entropic regularization technique,...)

- **Fluid Dynamics** : phase change processes (nucleation, cavitation, evaporation), multiphase flows, bubbles and drops, micro- and nano-fluidics, nanoparticles, experimental modelling of industrial processes (extraction column, flashing, spray/atomization, spray drying, ...), cryogenic two phase flows.

RESEARCH ACTIVITIES

Principal investigator of funded research on:

- Two phase flows characterisation
- Development of combined optical measurement techniques
- Nanoparticles handling and characterisation

Funded by: Agfa-Gevaert(BE), Baxter (USA), Gent University (BE), DGA (FR), Total-GDF Suez, (FR), University California San Diego (USA), Solvay SA, ESA, IRSN (FR), IWT (BE)