



UNIVERSITÀ DEGLI STUDI DELL'AQUILA

Prof. Carlo Cantalini Curriculum scientifico

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Associate Professor, Dept. of Chemistry, Chemical Eng. and Materials, University of L'Aquila

Publications Papers and Proceedings to international conferences **n. 172**

Patents **n. 4**

Publications tracked by Scopus **n. 90**

Citations **n. 2345** (excluding self citation)

H-index **34**

Research Grants: 1999-2001 C.N.R.-Progetto finalizzato Materiali per L'elettronica MADESS II

2005-2006 Regione Abruzzo ? Monitoring of noxious gases in urban area

2011-2013 PRIN-09 - Development of materials with Hierarchical Architectures

Spin-off Company Blu Tecnologie Srl

Carlo Cantalini received his degree in Chemical Engineering from the University of L'Aquila in 1985, after 3 years experience in industrial companies, joined in 1990 as Assistant Professor, the Department of Chemistry, Chemical Engineering and Materials of L'Aquila University. Since 2001 he is Associate Professor (ING/IND-22 Materials Science and Technology) of ?Material Science? and ?Corrosion?

Research Profile

Prof Cantalini's research focuses on the preparation and characterization of different kinds of materials, namely metal oxide nanostructured semiconductors (MOS) and ?graphitic layers? (GL) for gas sensing applications. With the exception of initial research in the field of recycling industrial wastes to obtain iron-reach glass and glass ceramic, since

1990 he studied the application of micro-porous ceramics materials as humidity and gas sensors. Initially bulk ceramics oxides sensors were prepared by mixing and sintering different metal oxides powders in order to achieve suitable micro-structures which maximize water or gas response. Since 1995 in collaboration with the Department of Physics of L'Aquila University thin film metal oxides sensors were prepared by both physical and chemical method and characterized in terms of Sensitivity, Selectivity and Stability of the electrical response to different gases like NO₂, CO, H₂, water vapour. Since 2002 in collaboration with the University of Perugia "graphitic sensors" based on single and multi-walled carbon nanotubes (CNTs) were prepared. This research, more recently, opened new perspectives in the application of graphene and graphene oxide as new gas sensing materials. Current research in collaboration with the Department of Mechanical engineering of Padova University, financially supported by PRIN national funding, is focussed on the preparation of "Hierarchical architectures" which make use of multi dimensional (1D, 2D, 3D) nanostructures to improve sensor response. Carlo Cantalini in collaboration with the Department of Electronics of L'Aquila University is one of the founding members of "BLU Tecnologie Srl", a spin-off company which capitalize an interdisciplinary approach focussed on research of advanced materials in areas related to microelectronics and sensors. Patents from "BLU Tecnologie" research & development activities includes technology related to fabrication of sensors as well as new methods and strategies of detecting noxious gas in urban environment.