

## Europass Curriculum Vitae



### Personal information

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**Nationality** Italian  
**Date of birth** 1/8/1955

### Work experience

2021- present Research Director Emeritus associated at IMM-CNR  
 2020-2021 Head of the Institute for Microelectronics and Microsystems (IMM) – Rome UNIT  
 2014- 2020 Director of IMM-CNR  
 2007-2021 Research Director at IMM-CNR  
 2002-2007 Research Director at IFN-CNR  
 1998-2001 Senior Scientist at IFN-CNR  
 1985-1986 Visiting Scientist (16 months) at Hirst Research Centre - GEC (London), Prof. C. Hilsum and Prof. P. Migliorato;  
 1983 Visiting scientist (3 months) at the Tokyo Institute of Technology, Prof. M. Matsumura.  
 1982-1998 Researcher at the Institute for Photonics and Nanotechnologies (IFN) –CNR  
 1979-1982 Post-Doc at the Physics Dept. of Rome University "La Sapienza", prof. A. Frova and Prof. F. Evangelisti

### Education and training

1979 Laurea degree (summa cum laude), University of Rome "La Sapienza". Thesis on numerical modelling of solar cells characteristics (Prof. F. Bassani).  
**Title of qualification awarded** Doctor in Physics  
**Mother tongue(s)** Italian

**Other language(s)**

**Self-assessment**

*European level (\*)*

**English**

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2	C2	C2	C2	C2

(\*) [Common European Framework of Reference for Languages](http://europa.europa.eu/education/languages/)

## Main activities and responsibilities

Since 2004 he has been Head of the "Devices for large area electronics" Group at IMM-CNR. His main scientific activity is on the physics and technology of inorganic (amorphous, micro- and polycrystalline silicon) and organic (pentacene) thin film transistors. Recently he focused on flexible electronics, developing with his group new TFT technologies within the European project FlexiDis (coordinated by Philips) and the Italian Ministry of Research funded public-private lab Plast\_IC (coordinated by ST-Microelectronics). One of the main result has been the development of a polysilicon TFT technology on polyimide and the fabrication of demonstrators, based on such technology, such as a touch-keypad, flexible chemical sensors and pressure sensors for robotic applications. He has also developed excimer laser annealing processes for low temperature polysilicon TFTs as well as for ultra-shallow junction formation in Si for 'power electronics (European project FLASH). Other recent activities of his group are on the development of organic TFTs based on solution process and on the analysis of the OTFT electrical characteristics, with special attention to contact effects, and compact models, within the European project COSMIC. He has also been involved in the development of low-temperature deposition of Si nanowires (NW) for sensors applications and ultra-flexible microelectrode arrays for brain signal recording and stimulation, within the European project CORTICONIC. His activity in large area electronic has been internationally recognized as demonstrated by the long record of industrial research contracts with the main companies involved in the field (THALES, PHILIPS and ST-Microelectronics) and the involvement in some of the main European projects in the field (ECAM III, FlexiDis, COSMIC). He is one of the main international expert on thin film transistor, as demonstrated by the large number (35) of invited talks delivered on the subject in many international Conferences, the writing of the "thin film transistor" voice in the Encyclopedia of Electrical and Electronics Engineering (John Webster Editor, Wiley 1999). He has been responsible of several National (9) and European (7) Research contracts and also of industrial research contracts with ST-Microelectronics, Philips, THALES, GEC-Marconi and Leonardo. He is Director of the NanoMicroFab Open Infrastructure, funded by the Regione Lazio. He was part-time professor of Semiconductor Device Physics at the Roma III University between 2001 and 2006. He has authored more than 250 papers published on JCR journals (h-index 39 <http://scholar.google.it/citations?user=8dWdm8QAAAAJ>) and more than 170 contributions to Proceedings of International Conferences, has presented many oral communications and 35 invited talks in International Conferences and is author of 6 invited chapters on books and holds 11 patents. He has been Member of the Scientific Councils of IFN-CNR and IMM-CNR, Member of the Board of Delegates of the European MRS, Member of Society for Information Display and of the Electrochemical Society, Member of the CNR Committee for International Collaborations and Agreements, Head of the IMM-CNR Rome Unit and Director of IMM. He is currently the Italian representative at the IUPAP and President of the Nanotechnology Panel of CNR. He acts as reviewer for many International Journals (Applied Physics Letters, J. Applied Physics, IEEE Transaction on Electron Devices, IEEE Electron Device Letters, Electronics Letters, Thin Solid Films, Solid State Electronics, J. Electrochemical Society).

## Organisational skills and Editorial activities

**He has been co-Organizer of 8 International Workshops** ("Thin Film Transistors for Flat Panel Displays", within the 26th European Solid State Device Conference ESSDERC'96, (8-11 Sept.1996, Bologna, Italy); "Thin Film Materials for Large Area Electronics" E-MRS Spring Meeting, Strasbourg 30 May- 2 June 2000; "Thin Film Materials for Large Area Electronics", within the E-MRS Spring Meeting, Strasbourg 18-21 June 2002; SID-Mid Europe Chapter Spring Meeting on "Polysilicon technology and applications for AM-LCDs and AM-OLEDs", Rome, 21-22 March, 2002; Si-Workshop, Genova 11-13 Febbraio 2004; "Non-conventional thermal processes for advanced CMOS", Roma 21 January 2005; E-MRS Spring Meeting 2006, "Thin Film Materials for Large Area Electronics", Nice 29-May 2-June 2006; 2008 Co-organizer of the E-MRS Spring Meeting 2008, Workshop on Thin Film Materials for Large Area Electronics, Strasbourg, 26-30 May 2008;

**Chairman or co-Chairman of 6 International Conferences** (Third International Thin Film Transistor Conference, Rome, 25-26 January 2007; 4th International Thin Film Transistor Conference, Seoul, 24-25 January 2008; Workshop "Active Matrix Devices", 8th International Meeting on Information Displays, Seoul, 13-17 October 2008; Workshop "Active Matrix Devices", 9th International Meeting on Information Displays, Seoul, 12-16 October 2009; 29th International Display Research Conference, Eurodisplay 2009, Roma, 14-17 Sett. 2009; International Conference on Organic Electronics (ICOE) 2011, 22-24 June, Roma, 2011).

Editor of the following special issues: Proceedings of Symposium "Thin Film Materials for Large Area Electronics", EMRS 2000 Spring Meeting, Symposia Proceedings Volume 103, published as vol. 383 of Thin Solid Films; Proceedings of Symposium "Thin Film Materials for Large Area Electronics", EMRS 2002 Spring Meeting, Symposia Proceedings Volume 134, published as vol. 427 of Thin Solid Films. Solid State Electronics, vol. 52, Issue 3, March 2008, Papers selected from the 3rd International Thin Film Transistor Conference. He is currently Associate Editor of the Journal of Information Display and Area Editor of Micro and Nano Engineering (Elsevier).