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## CURRICULUM VITAE

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NAME Cricenti, Antonio	POSITION TITLE CNR Research Director		
Mother tongue: Italian Other languages: English			
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Rome University La Sapienza	Ph.D.	1983	Surface Physics

### A. Positions and Honors.

#### Positions and Employment

1984, external collaborator at the Istituto di Struttura della Materia del C.N.R , Italy  
1984-1986 Guest researcher at the University of Linkoping (Sweden)  
1986, May – 1999 June, Researcher at the "Istituto di Struttura della Materia del C.N.R."  
1989-1991 Responsible of a CNR Bilateral Project with the University of Linkoping (Sweden).  
1990 - 1998, Responsible of the Scientific project "Surface Physics" at the "Istituto di Struttura della Materia del CNR".  
1994-1999, Responsible of a CNR Bilateral Project with the University of Warsaw (Poland).  
1995 , April , Guest researcher at the Université d'Aix Marseille 1.  
1996 Responsible of a CNR Project "Scanning Probe Microscopies".  
1997 – 2000 Responsible of a Coordination Project within the CNR MADESS2 project for microelectronics.  
1998 to now Head of the Department "Scanning Probe Microscopy" at ISM CNR.  
1999 , June, First Researcher at Istituto di Struttura della Materia, CNR  
2001, to now Research Director at Istituto di Struttura della Materia, CNR  
2004 Responsible Project "Scanning probe Microscopy" Business Lab of FILAS, region Lazio  
2004-2013, Adjunct Professor, Department of Physics, Vanderbilt University  
2004-2008 Responsible of the Tor Vergata department of ISM CNR  
2008-2013 Delegate of the Director at the Tor Vergata department of ISM CNR  
2005 Member of Jury for PhD at EPFL, Lausanne (CH)  
2005-06 Responsible spin-off project "Technology transfer at excellence centers in the region Lazio"  
2010- to now Member of Mediterranean Institute of Fundamental Physics  
2011, May – to now Economic Consultant of MaAnshan Government, Chinese State of MaAnshan  
2011, May – to now APCEO Senior Expert, Asia-Pacific CEO Association, Worldwide

#### Honors

1988 winner of the prize of the Italian Physical Society for young researchers.

**B. Recent Research Support as Principal Investigator Apart from 1) coordination of 4 units within MADESS CNR Project (1994-1998) (more than 1 M€ total) and 2) Genoma CNR Project , ISM unit responsible (more than 100 k€)**

- 1) FIRB 2001, MIUR 2004-07 , Nanoscale Study of Polymeric Nanofilters, This study investigates nanofilters, used for making drinking water, by AFM and SNOM (ca 300 k€)
- 2) Roma Ricerche 2006-07 , Project for an interchanged STM-AFM-SNOM microscope , This project regards the development of a STM-AFM-SNOM microscope with interchanged head (ca 50 k€)
- 3) Tecnopolo Tiburtino 2005-07 , Project for a magnetic AFM , This project regards the development of a magnetic AFM microscope (ca 30 €)
- 4) NANOLUM Nano-objects for luminescence 2007-012 , *A European research group (Italy, France and Germany) on the luminescence properties of ultimate nano-size objects. This brought to European COST Action 1302(2013-17)*
- 5) FEL-SNOM 1997- 2008, A Italy-Switzerland-USA project for the development of Infrared near-field microscopy at Vanderbilt University, Nashville (USA) ( more than 2 M€, 300 k€ to ISM, 3 PhD and equipment and travel costs)
- 6) ISPEL 2000-2007 , An Italian project regarding the interaction of biological cells with 50 Hz magnetic field studied by AFM and SNOM. (more than 100 k€)
- 7) FELIS agreement 2010- 2015 , A Italy-United Kingdom project to study hexophagous cancer cells by infrared nanospectroscopy at Daresbury, (UK) (more than 2 M€, 200 k€ to ISM plus 2 PhD equipment and travel costs)
- 8) 2017-21 Italian ISM CNR – Mexico UNAM project on Nanoscale Heat Transfer (50 k€ plus 1 PhD, equipment and travel costs)

**C: EDITOR of the Following Books:**

- 1) EPIOPTICS 2000, World Scientific, 2001, A. Cricenti
- 2) EPIOPTICS 7, World Scientific 2004, A. Cricenti
- 3) EPIOPTICS 8, World Scientific 2006, A. Cricenti
- 4) Optics of surfaces and Interfaces VII, Wiley-VCH 2008, A. Cricenti, J.H. Dickerson, N.H. Tolk,
- 5) EPIOPTICS 9, World Scientific 2008, A. Cricenti
- 6) Synchrotron Radiation and Nanostructures, World Scientific 2009, A. Cricenti, G. Margaritondo
- 7) Optics of surfaces and Interfaces VIII, Wiley-VCH 2009, W.Richter, R.Del Sole, A.Cricenti
- 8) EPIOPTICS 10, World Scientific 2010, A. Cricenti
- 9) EPIOPTICS 11, World Scientific 2012, A. Cricenti

**D: Citations in National Newspapers, Journals and Reviews:**

About 50 citations on national newspapers regarding the SPM activity

**E: Citations in Books**

7 citations on books regarding the SPM activity and one in Enciclopedia delle Scienze Fisiche - Treccani- vol.V, Tav. XII.

## **F: PATENTS**

8 patents regarding the SPM activity

## **G: Invited Scientific Talks and Conferences**

More than 60 invited talks at International Conferences, Workshops and Schools.

## **H: Tutor Duties:**

Tutor of 9 Physics thesis and 3 PhD thesis at the I, II and III Rome University and of 4 CNR scholarships

## **I: Principal subjects**

The scientific activity of Dr. Antonio Cricenti has been focused on the study of electronic and structural properties of clean surfaces of semiconductors, of metallic overlayers on semiconductor surfaces and biological molecules deposited on surfaces of "real" metal substrates. He has designed and built several experimental apparatus at the highest international level. In particular a UHV chamber in with angle resolved Auger, UV and XPS photoemission coupled with a surface differential reflectivity set-up for the study of filled electronic bands and optical transitions between filled and empty surface states. He has developed scanning probe microscopes for biomedical applications over the years and has led several regional, national and international projects. He obtained the first high resolution images of DNA with a tunnel-effect microscope, published in Science in 1988. He guided the project of coupling a SNOM with infrared light at Vanderbilt University (USA) in 1996-2008 and played the leading role in developing an improved version of this instrument suitable for tumor diagnosis on the infrared light line at Daresbury in 2010-2016. He is involved in the research for early diagnosis of cancer and of amyotrophic lateral sclerosis (ALS) disease by means of micro-Raman and infrared scanning near- field optical microscopy and on theoretical and experimental study of the transfer of radiative heat between different bodies on a nanometer scale. These achievements have produced, in addition to publications, 8 patents already filed.

**J. 262 peer-reviewed publications on international journals, 33 Conference papers, 3 Editorial, 3 Reviews, 1 book chapter (source Scopus). H-index : 37 (Scholar Google) on more than 5200 citations, or 31 (Scopus) on more than 3800 citations.**

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Roma 5/Sep/2023

Antonio Cricenti

