



## Curriculum Vitae



### Personal information

Surname(s) / First name(s)

**Gigante Giovanni Ettore**

Address(es)

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Fax(es)

(remove if not relevant, see instructions)

E-mail

[giovanni.gigante@uniroma1.it](mailto:giovanni.gigante@uniroma1.it)

Nationality

Italian

Date of birth

1 January 1948

Gender

Male

### Desired employment / Occupational field

**Full Prof. of Applied Physics at Department SBAI of Sapienza University of Rome**

### Work experience

Dates

1972-76

Occupation or position held

fellow in the

Main activities and responsibilities

Teaching and Research

Name and address of employer

Faculty of Medicine of University of Rome "La Sapienza"

Type of business or sector

Applied Radiation Physics

Dates

1976-83

Occupation or position held

Assistant professor

Main activities and responsibilities

Teaching and Research

Name and address of employer

Faculty of Medicine of University of L'Aquila

Type of business or sector

Applied Radiation Physics

Dates

1983-86

Occupation or position held

Associate professor

Main activities and responsibilities

Teaching and Research

Name and address of employer

Faculty of Medicine of University of L'Aquila

Type of business or sector

Medical Physics and Archaeometry

Dates

1986-

Occupation or position held

Associate professor, full professor (2008)

Main activities and responsibilities

Teaching and Research

Name and address of employer

Department SBAI Sapienza University of Rome

Type of business or sector

Imaging and Archaeometry

## Education and training

Dates	1971																								
Title of qualification awarded	Degree of Physics																								
Principal subjects/occupational skills covered	Basic and advanced Physics. Developing of research abilities																								
Name and type of organisation providing education and training	Faculty of Science University of Rome "La Sapienza"																								
Level in national or international classification	ISCED 5A																								
<b>Personal skills and competences</b>																									
Mother tongue(s)	<b>Italian</b>																								
Other language(s)	<b>English, French</b>																								
Self-assessment																									
<i>European level (*)</i>																									
	<table border="1"> <thead> <tr> <th></th> <th colspan="2">Understanding</th> <th colspan="2">Speaking</th> <th>Writing</th> </tr> <tr> <th></th> <th>Listening</th> <th>Reading</th> <th>Spoken interaction</th> <th>Spoken production</th> <th></th> </tr> </thead> <tbody> <tr> <td><b>English</b></td> <td>B2</td> <td>B2</td> <td>B2</td> <td>B2</td> <td>B2</td> </tr> <tr> <td><b>French</b></td> <td>A2</td> <td>A2r</td> <td>A2</td> <td>A2</td> <td>A2</td> </tr> </tbody> </table>		Understanding		Speaking		Writing		Listening	Reading	Spoken interaction	Spoken production		<b>English</b>	B2	B2	B2	B2	B2	<b>French</b>	A2	A2r	A2	A2	A2
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<b>French</b>	A2	A2r	A2	A2	A2																				
	<i>(*) Common European Framework of Reference for Languages</i>																								
Social skills and competences	Attitude to the interdisciplinary research work. Good relational skills																								
Organisational skills and competences	<p>He is now the President of the Council of Educational Area of Technology for Restoration and Conservation of Cultural Heritage in the University of Rome "La Sapienza". He is the national coordinator of University courses for Conservation and Restoration. He is a founder member of Italian Archaeometry Society.</p> <p>He had the responsibility of national and international research projects funded by Italian Government, EU and NATO.</p>																								
Technical skills and competences	He is an expert of ND techniques applied to the diagnostic procedures in the field of Medicine and Conservation. The main subjects of his activities are: Imaging with x ray, x ray spettrometry and development of related instrumentation.																								
Artistic skills and competences	Author of books and articles on the relationship between sciences and humanities having also a dissemination aim.																								
Other skills and competences	He was several times guest, also for long period, of foreign research institutions in Belgium, United Stated and Brazil. He is leader of some research projects and he his responsible for projects of cultural exchange with Mexico and Brazil.																								
Additional information	His research interest has been focused on the development of ND techniques, applied nuclear physics, imaging and image processing, archaeometry and conservation. He is author of a large number of papers concerning the x ray physics and the development of techniques in journals of physics and applied physics and, more recently, on technique for image acquisition and processing. He is involved in some international collaboration and was invited speaker in national and international conferences in biomedical physics and archaeometry.																								

## Publications

1. Rao D.V., Yuasa T., Akatsuka T., Tromba G., Takeda T., Cesareo R., Brunetti A. e Gigante G.E., "Whole-atom Compton scattering cross-sections and individual shell cross-sections for the biological elements in the energy region from 1 to 4 keV", *Nuclear Instruments and Methods in Physics Research B*. 261 (1-2), 193-196, (2007)
2. Cesareo R., Ferretti M., Gigante G. E., Guida G., Moiola P., Ridolfi S. e Roldán Garcia C., "The use of a european coinage alloy to compare the detection limits of portable XRF systems. A feasibility study", *X-ray spectrometry*. 36 (3) 167-172 (2007).
3. Gigante G.E. "La tecnica della Fluorescenza a raggi x " in *Metodologie fisiche non distruttive per le indagini sui Beni Culturali* a cura di Giovanni E. Gigante e Maurizio Diana, 171-201, edito dal CSA dell'Università degli studi di Roma "La Sapienza", 2005.
4. Gigante G.E. e M. Cavallini, "De Re Metallica: dalla produzione antica alla copia moderna" collana "[Studia Archaeologica](#)" volume 150, L'Erma di Bretschneider, Roma 2007.
5. Gigante G.E., "La formazione nei settori della conservazione, del restauro e dell'archeometria", in *Elementi di archeometria. Metodi fisici per i beni culturali* a cura di M. Martini, A. Castellano e E. Sibilia, Egea Editore, Milano ISBN 978-88-238-2092-0 , pp 9-28, 2007
6. Gigante G.E. "Copia digitale ed archiviazione di documenti" in *Libri e documenti. Le scienze per la conservazione e il restauro*, a cura di A. Zappalà, Edizioni della Laguna, Gorizia, 2007 ISBN 88-8345-265-8, pp 585-612
7. Gigante G.E., Artioli D., Ferro D., Gabrielli N., Guida G., Guido S., Guiso M., Mantella G, Ridolfi S., "Restoration of the Funeral Monument of Pope Sixtus IV By Antonio Pollaiolo (1493) in the Vatican Basilica, Non Invasive and Microdestructive Analysis. An Operation Protocol", *proceedings of ART '08 NDT.net Issue 2008-09 ISSN 1435-4934*  
<http://www.ndt.net/article/art2008/papers/154GiganteRidolfi.pdf>.
8. Gigante G. E. Cesare Brandi e il mondo della scienza e della tecnologia Cesare Brandi Oggi: Prime Ricognizioni a cura di Giuseppe Basile" Editrice Il Prato, Padova 2008 pag. 55-57, ISBN 978-88-6336-006-6.
9. Cesareo R., Ridolfi S., Marabelli M., Castellano A., Buccolieri G., Donativi M., Gigante G. E., Brunetti A. e Rosales Medina M. A., "Portable Systems for Energy-Dispersive X-Ray Fluorescence Analysis of Works of Art " in *Portable X-Ray Fluorescence Spectrometry: Capabilities for in Situ Analysis* di Philip J. Potts, Margaret West, The Royal Society of Chemistry, 2008 ISBN-13: 9780854045525, 206-243.
10. Rao D.V., Swapna M., Cesareo R., Brunetti A., Akatsuka T., Yuasa T, Takeda T., Tromba G.e Gigante G. E., "Synchrotron-induced X-ray fluorescence from rat bone and lumber vertebra of different age groups." *Nuclear Instruments and Methods in Physics Research B* 267, 502-505 (2009).
11. Rao D.V., Swapna M., Cesareo R., Brunetti A., Akatsuka T., Yuasa T, Takeda T., Tromba G.e Gigante G. E., Investigation of the distribution of elements in snail shell with the use of synchrotron-based, micro-beam X-ray fluorescence spectrometry. *J. of Trace Elements in Medicine Biology* 23, 251-257 (2009).
12. Rao D.V., Cesareo R., Brunetti A., Akatsuka T., Yuasa T., Takeda T., Tromba G. e Gigante G. E., "Micro-CT imaging of rat bone and lumber vertebra using synchrotron radiation." *American Institute of Physics, Conf. Proc.* March 10, 1099, 896-899 (2009) ISBN: 978-0-7354-0633-9.
13. Cesareo R., Gigante G. E, Castellano A., Iwanckyk J.S., "Portable Systems for Energy Dispersive X-Ray Fluorescence Analysis", *Encyclopedia of analytical Chemistry*, curata da R. A. Meyers, ed. John Wiley & sons, 1-17, 2009
14. Gigante G.E., Marabelli M., Cesareo R., Ridolfi S., Strategy in the preservation of metal monuments of ancient and modern age: the role of x ray techniques, *Avances en análisis por técnicas de rayos X*, volume 15, 2009 edito da Facultad de Matemática, Astronomía y Física Córdoba-Argentina ISSN 1515-1565 atti del SARX 2008 Cabo Frio, Rio de Janeiro, (su invito).
15. Rao DV, Swapna M, Cesareo R, Brunetti A, Akatsuka T, Yuasa T, Takeda T, Gigante GE. "Synchrotron-based scattered radiation from phantom materials used in X-ray CT" *J. X ray Science and Technology* 2010,18(3), 327-37.
16. Guida G., Artioli D., Ridolfi S. Gigante G. E., "Study by Mobile Non Destructive Testing of The Bronze Statue of The "Satiro" of Marsala., *Science for Cultural Heritage' Technological Innovation and Case Studies in Marine and Land Archaeology in the Adriatic Region and Inland*, 23-30, 2010, World Scientific Publishing Co.,Singapore ISBN-13 978-981-4307-06-2 o 978-981-4307-07-9 (eBook)
17. Corbellini, S., Parvis, M., Grassini S., Piantanida, M., Consalvi, F., Gigante, G.E., Meddi, F., "Electrical Tomography for the Monitoring of Water Moisture in Painted Walls and Ceilings", *Proceedings IEEE International Instrumentation And Measurement Technology Conference I2MTC Austin, TX Maggio 03-06, 2010.*

18. Gigante G.E. e Residori L., "Sensitometria, qualità dell'immagine ed effetti fotografici" cap. III del volume di L. Residori "Fotografie: materiali fotografici, processi e tecniche, degradazione, analisi e diagnosi" Editrice Il Prato, Padova 2009, ISBN 978-88-6336-050-9.
19. Residori L., Gigante G.E. e M. Zanchi, "Procedimenti e Tecniche" cap. VI del volume di L. Residori "Fotografie: materiali fotografici, processi e tecniche, degradazione, analisi e diagnosi" Editrice Il Prato, Padova 2009, ISBN 978-88-6336-050-9.
20. Gigante G. E., Il ponte tra le due culture Un ponte che si costruisce da solo? Il ponte tra le culture, Galileo, n. 194, pp. 42-43, 2009, ISSN 1122-9160.
21. Rao D. V., Swapna M. Cesareo R., Brunetti A., Zhong Z., Akatsuka T., Yuasa T., Takeda T., Gigante G.E. Cork embedded internal features and contrast mechanisms with DEI using 18,20,30,36 and 40 keV synchrotron X-rays", Research in Non-destructive Evaluation July 2010, 21( 3): 171 - 183
22. Rao D. V., Swapna M. Cesareo R., Brunetti A., Zhong Z., Akatsuka T., Takeda T., Gigante G. E., "Use of synchrotron-based diffraction-enhanced imaging for visualization of soft tissues in invertebrates", Applied Radiation and Isotopes 2010, 68(9),1687-1693. Visco, G., Ridolfi, S., Plattner, S. H.; Gigante, G. E "Razors, Horse Bits or Axes: Search of the Different Composition in Common Use Bronze Villanovan Objects (VIII-VII Century B.C., Italy) by Multivariate Analysis", Current Analytical Chemistry, 2010, 6 (1), 11-18.
23. Rao D.V., Swapna M., Cesareo R., Brunetti A., Akatsuka T., Yuasa T, Takeda T., Tromba G. e Gigante G. E., "Synchrotron-based X-ray fluorescence, imaging and elemental mapping from biological samples" Pramana Journal of Physics, 76(2), 1-9 (2011).
24. Cesareo R., Bustamante A., Fabian J., Alva W., Chero L., Espinoza C., Rodriguez R, Se-clen M., Gutierrez V, Lévano E.B., Gonzales A.J., Rizzutto M.A., Poli E, Calza C, dos Anjos M, Lopes R.T., Gigante G.E., Ingo G.M., Riccucci C., Elera C., Shimada I., Curay V., Castillo M., Lopes F., "Evolution of Pre-Columbian Metallurgy from the North of Peru' Studied with a Portable Non-Invasive Equipment Using Energy-Dispersive X-Ray Fluorescence", Journal of Materials Science and Engineering B 1 176, 48-81, (2011)
25. G.E. Gigante, L. Residori "La formazione dell'immagine in bianco e nero" e "La formazione dell'immagine a colori" in Materiali Fotografici dalle tecniche storiche al digitale a cura di Donatella Matè e Maria Carla Sclocchi ICPAL 2011
26. G.E. Gigante, F. Liberati "La nascita del digitale" in Materiali Fotografici dalle tecniche storiche al digitale eds. Donatella Matè and Maria Carla Sclocchi ICPAL 2011
27. Gigante G.E., Ridolfi S., Ferro D., "Diagnostic investigations and statistical validation of EDXRF mapping of the burial monument of Pope Sixtus IV by Antonio Pollaiuolo (1493) in the Vatican", Journal of Cultural Heritage (2011), doi:10.1016/j.culher.2011.11.003.
28. Rao D.V., Swapna M., Cesareo R., Brunetti A., Akatsuka T., Yuasa T, Takeda T., Tromba G., Gigante G. E., "Synchrotron-based small angle X-ray scattering from biogenic materials. Physica Scripta, 84 (6), pp.6, (2011) 065802. DOI: 10.1088/0031-8949/84/06/065802
29. Rao D.V., Swapna M., Cesareo R., Brunetti A., Akatsuka T., Yuasa T, Takeda T., Tromba G., Gigante G. E., "Synchrotron-induced X-ray fluorescence applied to invertebrates to investigate the role of essential trace elements in biological process . Physica Scripta, 85(2012) doi:10.1088/0031-8949/84/06/065802
30. Gigante G.E. and Ridolfi S. "X ray techniques and X ray fluorescence with portable systems", in 'Conservation Science – An Application of Instrumental Analysis in the Preservation of Cultural Heritage', in series Lecture Notes in Chemistry, ed. E. Varela, Springer Verlag, 2012

Rome, 19 July 2012