

Pietro Baraldi's curriculum

He was born in Concordia (Modena, I) the 5th of June 1946, and graduated in Chemistry cum laude at the University of Modena the 23rd of July 1970. He is Associated Professor of Physical Chemistry.

Scientific Activity

His research is mainly focused in the field of vibrational spectroscopy, specifically in the sector of applied infrared and Raman spectroscopy. He has extended the applications of the vibrational techniques to the study of a number of materials and working techniques concerning art and archaeology. With the Archaeological Superintendence of Pompeii and Naples he is completing an official collaboration on materials and pigments of wall painting in all the Vesuvian area, beyond the materials excavated in coeval recipients. By means of Raman microscopy since 2002 he carried out in situ and ex situ measurements on important artworks of the great painters such as: Leonardo's Annunciation in 2007, paintings by Caravaggio, Guercino, Tintoretto, Lotto. Other anonymous masters, such as that in the Cappella Contrari of Vignola, were studied, besides illuminated manuscripts, such as the Bible of Borso of Este, and the Breviary of Hercules of Este, the Vienna Dioskurides, the Naples Dioskurides and more than 50 illuminated codices from the scriptorium of Nonantola.

He extended his research on Roman age wall paintings of the VIII regio (Aemilia), but also on the X regio (Venetia) in collaboration with the Chemistry Department "Ca' Foscari" of Venice on the materials and techniques of the wall paintings. His latter research concerns the survived polychromy of Romanesque Churches of Modena and Reggio and of other towns as well.

Presently, he is performing investigations on the mural paintings of the rock churches of Cappadocia and of the Central and Southern Italy in the framework of a project financed by the Italian Ministry in 2011-12 with prof. Maria Andaloro of the Tuscia University.

Moreover he is developing with the archaeological section of the Galleria degli Uffizi in Florence directed by Fabrizio Paolucci a research about the survival of polychromy on the classical statues.

He has carried out a longlasting investigation on wall paintings, on painted marbles, unguentaries, mosaics, glasses, ink and bronzes from Herculaneum, Pompeii, Capua, Cuma, Stabiae, Oplontis, Paestum. With the archaeologists and responsables of Pompeii he has developed the contents of thesis about the *House of Casti Amanti*, the materials and the executive techniques of the *Insula del Centenario*. He started collaborations between the Department of Chemistry and the Biblioteca Estense Universitaria of Modena (on its site a research on the recovering of parchments of the XIV century and the analysis on the Breviary of Hercules are readable), the Institute for Cultural Heritage of Pieve di Cento, the University "Ca' Foscari" in Venice, the University of Pisa, and the Tintoria Emiliana s.r.l. for diagnostics on dyes and fabrics.

He organized national and international Conferences:

Pompeii 2003 "Meeting for the study and the updating of the applications of chemical and physical sciences to Vesuvian archaeology" ; Modena "A new perspective for the scagliola artworks" the 18th June 2004; Modena 2005 "Workshop on the Bible of Borso d'Este"; Modena 2007 "IV International Conference on the Application of Raman Spectroscopy in Art and Archaeology"; from 2008 to 2014 "Art and Science": annual meeting on the study of illuminated codices.

He cooperate with MiBaC, the Italian Ministry for Cultural Heritage, the Archaeological Superintendence of Emilia Romagna and the Archaeological Superintendence of Naples and Pompeii. He acts as referee for the journals: Journal of Raman Spectroscopy, Spectrochimica Acta, Analytica Chimica Acta, Archeometry, Analytical and Bioanalytical Chemistry, Vibrational Spectroscopy. His scientific work is summarized in about 200 papers in national and international journals and poster and communications to national and international congresses.

He obtained funds for research on Cultural Heritage: in 2000 a financial support from CNR for the development of a Database of Raman Spectra of historical pigments, co-funding from Italian MIUR in 2001 (The painting and ceramic pigments in Cisalpina in connection with their production in southern Italy), in 2003 (Study of wall pigments and patinas in the Insula IX,8 of Pompeii) and in 2005 (Vesuviana: from diagnostics of materials to the reconstruction of techniques and utilizations) in 2007 (Ancient materials used as pigments, cosmetics and drugs) and 2011 (Art and rock habitat in Cappadocia and in Central and Southern Italy) of which he has been the responsible of the local Unit. With two funds from the Fondazione Cassa di Risparmio di Modena he could buy two Raman microscopes, one with high features and the other suitable for in situ measurements.

Teaching activities

From 29th of January 1986 he is associate professor of Physical Chemistry and has taught "Physical Chemistry Exercitations", until the a. y.1994-95. From the a.y. 1995-96 he was charged of the course "Physical Chemistry" for the Biological Sciences degree and from the a.y. 1998-99 till 2001-2002 of the course "Physical Chemistry Laboratory" for the Chemistry degree. From the a.y. 2003 he has the lessons of "Chemistry of the Environment and of Cultural Heritage" for Geologists and of "Chemical and Biological degradation of Cultural Heritage". From 2005 he had the lessons of "Chemical principles for recovering, intervention and conservation of C. H." and of "Diagnostics applied to Cultural Heritage" per the degree in Sciences for Cultural Heritage of the University of Modena and Reggio Emilia. For the degree in Natural Sciences he is now charged of a free choice course titled "Diagnostics of the natural dyes". For the present chemistry degree he teaches "Molecular spectroscopy" with laboratory experiences. He collaborated with other Universities by teaching e. g. "Scientific methods for Cultural Heritage" at the Master of Pisa "Methods for the Conservation of Cultural Heritage". Moreover, he accepted to develop lessons of Archaeometry for the Specialization School in Archeology at the University of Bologna.