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E I N L A D U N G

zum

V O R T R A G

von

Prof. Dr. Alfonso Zoleo

Department of Chemical Sciences, University of Padova, Italy

EPR (Electron Paramagnetic Resonance) Spectroscopy in Cultural Heritage

Mittwoch, 21. Juni 2017, 13:00 Uhr

Akademie der bildenden Künste, Schillerplatz 3

Turm 2

EPR (Electron Paramagnetic Resonance) Spectroscopy in Cultural Heritage

Prof. Dr. Alfonso Zoleo, Department of Chemical Sciences, University of Padova, Italy
alfonso.zoleo@unipd.it

Abstract

Electron Paramagnetic Resonance (EPR) spectroscopy provides a powerful tool to investigate paramagnetic species in a variety of materials. Although not very common, paramagnetic species play a major role in material degradation, as well as in chromoforic compounds of strong interest for Cultural Heritage. E.g., Fe(III), Mn(II), Cu(II) are very common paramagnetic species which can be easily detected and characterized through EPR. Many pigments, as well as CH materials, contain these species and can be analyzed through EPR. Also, degradation in organic materials, like paper or parchment, results often in radicals, which can be spotted through EPR. In this short presentation, the EPR technique is introduced in a simple way and a range of applications on Cultural Heritage items is shown.

CV

1995: First degree in chemistry at the Department of Chemical Sciences of the University of Padova, Italy under the supervision of Prof. Marina Brustolon.

1995-2000: Ph.D course in chemical sciences at the same department, under the supervision of Prof. Marina Brustolon, concerning advanced EPR techniques (CW and pulsed EPR) on fullerene paramagnetic derivatives.

2000-2001: Post-doctoral position in the European research program TMR (Training and Mobility Research) on Photosynthesis at the Max Volmer Institute of the Technische Universität, Berlin, under the supervision of Prof. Wolfgang Lubitz.

2001-2008: Post-doctoral research in Padua, with application of advanced EPR techniques to biological, organic and inorganic materials, under the supervision of Prof. Marina Brusolon and Prof. Anna Lisa Maniero.

since 2008: Active in the study and application of EPR to Cultural Heritage materials, specifically to cellulose and paper materials from ancient books, working in cooperation with national and international experts in the field, and crossing the results with data from canonical spectroscopies (IR, Raman, UV-Vis) and other analytical techniques (HPIC, HPLC, MS).

since 2010: Assistant Professor at the Department of Chemical Sciences, University of Padova, Italy.