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von

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MINERALOGICAL APPROACH TO THE ANALYSIS OF PIGMENTS IN THE FINE ARTS

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Vortragssaal EA1 (Erdgeschoss)

Mineralogical Approach to the Analysis of Pigments in the Fine Arts

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Abstract

The main objective of this lecture is to show the importance of using the knowledge of geosciences in the interpretation of origin of historical paintings. Mineral pigments will be discussed as indicators usable for the dating and tracing the provenance of anonymous paintings as well as for the attribution of the authorship. In this point, an advanced materials microanalysis (based mainly on powder X-ray micro-diffraction) will be combined with further descriptions of technological and artistic fingerprints. A special attention will be given to pigments related to ore mining in Middle Ages (iron reds, azurite, fluorite etc.), further to clay pigments, and finally to pigments important from the point of view of technology transfers (e.g. lead-based yellows). In the case studies, successful assignments to particular periods, regions or workshops based on materials data will be demonstrated.

DAVID HRADIL, Ph.D.

David Hradil is a mineralogist specialised to the microanalysis of pigments, provenance studies and the processes of chemical interactions in painting layers. He published numerous papers focused on mineralogical analysis of historical paintings and methodological developments in the field. Since 2004 he has headed laboratory ALMA - joint workplace of the Academy of Fine Arts in Prague and the Institute of Inorganic Chemistry of the Czech Academy of Science, which intentionally promotes and applies an interdisciplinary approach to the cultural heritage research combining science, art and humanities within one closely collaborating team.

Born 1968 at Beroun, Czech Republic

1998: PhD. degree in applied geology, Faculty of Science, Charles University, Prague

since 1997: scientist at the Institute of Inorganic Chemistry AS CR

1998 – 2000 and since 2005: Academy of Fine Arts in Prague, part-time job

since 2002: teaching at Charles University in Prague (Clay mineralogy and geology), supervisor of diploma and doctoral theses

since 2004: Head of Academic Materials Research Laboratory of Painted Artworks (ALMA) – joint workplace of the Institute of inorganic Chemistry AS CR and Academy of Fine Arts in Prague (www.alma-lab.cz)

Research experience: mineralogical analysis and microanalysis of pigments, conservation science, clay chemistry and mineralogy, chemical weathering processes

Member of the Czech National Clay Group

Author / co-author of ca 50 scientific papers in international journals (ca 400 citations, h-index 12)

Co-editor of conference proceedings Technologia Artis 2006 and 2008, Acta Artis Academica 2010 and 2012 (Academy of Fine Arts in Prague)

Principal investigator of national and international research projects e.g. on “novel non-invasive and microanalytical methods for study of mediaeval paintings, origin of pigments and their chemical degradation” or “phase and structural X-ray analysis and microanalysis of traditional art pigments used in Mid-European painting“.

Referee for scientific journals, e.g. Clays and Clay Minerals, Journal of Sedimentary Geology, Archaeometry, X-ray Spectrometry, Spectrochimica Acta, Journal of Archaeological Science