

## Programme

**14 May, Wednesday, Faculty of Chemistry JU, Krakow, ul. Ingardena 3**

11.00–13.00 Registration

13.00–13.30 **Opening ceremony**, Prof. Wojciech Nowak, Rector of the Jagiellonian University

**Welcoming remarks**, Prof. Grażyna Stochel, Dean of Faculty of Chemistry JU; Prof. Krzysztof Stopka, Director of the JU Museum; Prof. Marta Lempart-Geratowska, Dean of the Faculty of Conservation and Restoration of Works of Art of Jan Matejko Academy of Fine Arts in Cracow; Prof. Małgorzata Witko, Director of the Jerzy Haber Institute of Catalysis and Surface Chemistry PAS; Prof. Urszula Rychlewska, Adam Mickiewicz University in Poznan, Coordinator of International Year of Crystallography events in Poland

13.30–14.00 **Presentation of the *Plus Ratio Quam Vis* Medal to Professor Henk Schenk, past president of the International Union of Crystallography**

**Session 1** Moderated by Prof. Wiesław Łasocha, Faculty of Chemistry Jagiellonian University in Krakow, Poland

**Role of crystallography in science, art and everyday life**  
open session for the conference participants and general public.

14.00–14.40 ***X-Ray Crystallography, 100 years of seeing atoms and molecules in three dimensions***, Prof. Henk Schenk, University of Amsterdam, the Netherlands

14.40–15.00 ***Crystals and the secrets of life***, Prof. Krzysztof Lewiński, Faculty of Chemistry Jagiellonian University, Krakow, Poland

15.00–15.20 ***Crystallography and drug design***, Prof. Marek L. Głowka, Institute of General and Ecological Chemistry, Faculty of Chemistry, Lodz University of Technology, Poland

15.20–15.40 ***Crystals as pigments in the light of historical written sources***, Dr hab. Zofia Kaszowska, Faculty of Conservation and Restoration of Works of Art, Jan Matejko Academy of Fine Arts in Krakow, Poland

15.40–16.00 ***Quasicrystals***, Prof. Janusz Wolny, University of Science and Technology, Faculty of Physics and Applied Computer Science, Krakow, Poland

16.00–16.20 ***Synchrotron SOLARIS: new light for Polish science***, Prof. Marek Stankiewicz, Director of the Polish synchrotron radiation facility SOLARIS, Krakow, Poland

16.20–16.30 Announcement of the winners of the contest ***'The role of crystals in human life'***

16.30 Opening of the exhibition ***'In the wonderful world of crystals'***

17.00 Get-together

**15 May, Thursday, Jagiellonian University Museum, Krakow, ul. Jagiellonska 15**

8.00–9.20 Registration

**Session 2** Chairman: Henk Schenk, University of Amsterdam

9.20–10.00 *New information provided by radiography, XRD and XRF as heuristic approaches in the multicriterial studies of the triptych The Last Judgement attributed to Hans Memling*, Iwona Szmelter, Faculty of Conservation-Restoration of Works of Art, Academy of Fine Art in Warsaw, Poland, Hélène Rousselière, CHARISMA-MOLAB-FIXLAB-CNRS LAMS, Laboratoire d'Archéologie Moléculaire et Structurale-UPMC-UMR 8220, Ivry sur Seine, France

10.00–10.20 *One painter and two painting techniques: material studies of Bathory at Pskov (1872) and Rejtan, or the Fall of Poland (1866) by Jan Matejko*, Sylwia Pawełkiewicz, Petr Bezdicka, Petr Svora, Conservation Laboratory, Warsaw, Poland

10.20–10.40 *Application of modern analytical techniques in the investigation of the large-scale painting Nero's Torches by Henryk Siemiradzki*, Dominika Sarkowicz, Marzena Sieklucka, Anna Klisińska-Kopacz, Piotr Frączek, Michał Obarzanowski, National Museum in Krakow, Poland

10.40–11.00 *Analysis of clay minerals in the Fine Arts as a part of provenance studies*, Petr Bezdicka, Janka Hradilová and David Hradil, ALMA laboratory, joint workplace of the Academy of Fine Arts in Prague and the Institute of Inorganic Chemistry of the AS CR, v.v.i, Husinec-Rez, Czech Republic

11.00–11.30 Coffee break

**Session 3** Chairman: Zbigniew Sojka, Faculty of Chemistry Jagiellonian University

11.30–12.00 *The characterisation of ancient metals*, Gilberto Artioli, Università di Padova, Dipartimento di Geoscienze, Italy

12.00–12.20 *Conservation aspects and XRF analysis of medieval silver coins (Prague pennies)*, Beata Miazga, Institute of Archaeology, University of Wrocław, Poland

12.20–12.40 *Gold, silver or bronze? XRF analysis of metallic cultural heritage objects from the National Museum in Krakow* Julio M. del Hoyo-Meléndez, Laboratory of Analysis and Non-Destructive Investigation of Heritage Objects, National Museum in Krakow, Poland

12.40–13.00 *Material research on archaeological objects using PIXE and other non-invasive techniques*, E.A. Miśta, A. Stonert, A. Korman, J.J. Milczarek, I.M. Fijał-Kirejczyk, P. Kalbarczyk, National Centre for Nuclear Research, Otwock, Poland

13.00–14.00 Lunch break

**Session 4** Chairman: Roman Kozłowski, Jerzy Haber Institute of Catalysis and Surface Chemistry PAS

14.00–14.30 *Computed tomography as a non-destructive diagnostic method in the field of conservation and restoration*, Tea Katunaric, Arts Academy, University of Split, Croatia

14.30–14.50 *X-ray dual source computed tomography as a modern tool in the investigations of structural layers in the wooden supports of various ancient objects*, Anna Mikołajska, Academy of Fine Arts in Krakow, Faculty of Conservation and Restoration of Works of Art, Department of Applied Physics, Poland; Małgorzata Urbańczyk-Zawadzka, Robert Paweł Banyś, Radiology Department, John Paul II Hospital, Krakow, Poland

14.50–15.10 *Computed tomography of wooden sculptures in conservation practice: examinations of techniques and state of preservation*, Przemysław Gorek, Anna Żurek, Gorek Restauro Studio Conservation & Restoration of Fine Art, Warsaw, Poland

15.10–15.30 *A multi-dimensional investigation using X-ray diffraction and computed tomography*, Szymon Stolarek, Panalytical B.V. Warsaw, Poland

## **Session 5**

### **15.30–16.30 POSTER SESSION:**

*Application of laser ablation in the conservation of artworks made of copper*, T. Onyszczyk, H. Garbacz, J. Marczak, A. Koss, Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland

*St. Catherine of Alexandria by Kulmbach from the Czartoryski Collection in Krakow Cracow*, Małgorzata Chmielewska, The National Museum in Krakow, Poland

*Investigation of historic powdery pigments inherited from Henryk Siemiradzki*, Alicja Rafalska-Łasocha, Joanna Szydłowska, Marta Grzesiak-Nowak, Dominika Sarkowicz, Wiesław Łasocha, Faculty of Chemistry Jagiellonian University, Krakow, Poland

*Investigation of pigments and ground layers by  $\mu$ -XRPD*, Marta Grzesiak-Nowak, Jowita Dranka, Alicja Rafalska-Łasocha, Agnieszka Pawlak, Wiesław Łasocha, Jerzy Haber Institute of Catalysis and Surface Chemistry PAS, 30-239, Krakow, Poland

*SEM-EDX studies of smalt pigment in Gdansk paintings of the 17th century*, B. Szmelter-Fausek, J. Olszewska-Świetlik, Institute for the Study, Restoration and Conservation of Cultural Heritage, Nicolaus Copernicus University in Torun, Poland

*SEM-EDS and XRF analysis of technology and technique of graining of selected 19th-century organ cases from Western Pomerania*, Marcin Fausek, Justyna Olszewska-Świetlik, Institute for the Study, Restoration and Conservation of Cultural Heritage, Nicolaus Copernicus University in Torun, Poland

***Identification of Prussian blue in the works of Szymon Czechowicz (1698–1775) with the use of a scanning electron microscope (SEM-EDS) and electron backscattered diffraction (EBSD)***, Ewa Doleżyńska-Sewerniak, Izabela Kalemba, Casimir the Great University in Bydgoszcz, Poland

***XRPD Investigations of ground layers in easel paintings***, Alicja Rafalska-Łasocha, Katarzyna Luberda-Durnaś, Elżbieta Modzelewska, Agnieszka Pawlak, Wiesław Łasocha, Faculty of Chemistry, Jagiellonian University, Krakow, Poland

***Plastic artwork, a challenge of our time: FTIR, RAMAN, NMR, XRF analysis of artworks by T. Kantor, A. Szapocznikow, M. Bałka and P. Althamer***, Monika Jadzińska, Paweł Parzuchowski, Academy of Fine Arts, Warsaw, Faculty of Conservation and Restoration of Works of Art, Poland

***Traces of Anthony van Dyck: multidisciplinary studies of two portraits of women***, Anna Selerowicz, Iwona Szmelter, Faculty of Conservation-Restoration of Works of Art, Academy of Fine Art in Warsaw, Poland

***Application of X-ray techniques in the attribution of a painting attributed to Raphael's apprentice***, Barbara Łydźba-Kopczyńska, Grażyna Bastek, University of Wrocław, Faculty of Chemistry, Cultural Heritage Research Laboratory Wrocław, Poland.

***X-ray analysis of art objects using Rigaku products***, Andrzej Węsek, TESTCHEM, Pszow, Poland

**16.30–17.30 Visit to Collegium Maius Jagiellonian University Museum**

**16 May, Friday, Jagiellonian University Museum, Krakow, ul. Jagiellonska 15**

**Session 6** Chairman: Wiesław Łasocha, Faculty of Chemistry, Jagiellonian University

9.00–9.40 ***'Hierarchical' examination of paintings by V. van Gogh using several X-ray-based methods of investigation***, K. Janssens, L. Monico, C. Miliani, G. Van der Snickt, F. Vanmeert, M. Alfeld, B. Brunetti, M. Cotte, G. Falkenberg and E. Hendriks, Department of Chemistry, University of Antwerp, Belgium,

9.40–10.00 ***Originals or copies? X-ray based examination of two pairs of pendant portraits by Marcello Bacciarelli and his studio from Warsaw Royal Castle and Łazienki Museums***, Regina Dmowska, The Royal Castle, Warsaw, Poland.

10.00–10.20 ***Non-destructive in situ study of Alonso Vazquez's paintings using XRF and multispectral techniques***, A. Kriznar, K. Laclavetine, E. Hernández, E. Arroyo, M.A. Respaldiza and J.L. Ruvalcaba Sil, Centro Nacional de Aceleradores (CNA), Universidad de Sevilla-CSIC-Junta de Andalucía & Departamento de Física Atómica, Molecular y Nuclear, Universidad de Sevilla, Spain

10.20–10.40 ***Radiation damage in cultural heritage: the case of the photosensitive pigment***

**Prussian blue**, Claire Gervais, Marie-Angélique Languille, Nadim Scherrer, Giulia Moretti, Loic Bertrand, Bern University of Applied Sciences, Bern, Switzerland

10.40–11.00 **Characterisation of the paintings of Maksymilian Gierymski using X-ray based techniques**, Anna Klisińska-Kopacz, Piotr Frączek, Elżbieta Zygier, National Museum in Krakow, Poland

11.00–11.30 Coffee break

**Session 7** Chairman: Janusz Czop, National Museum in Krakow

11.30–12.00 **Macro-XRF scanning: a new tool for examination of artwork**, Piotr Targowski, Justyna Olszewska-Świetlik, Bogumiła J. Rouba, Nicolaus Copernicus University, Torun, Poland

12.00–12.20 **X-ray based imaging of hidden painting layers using a 2D position sensitive gaseous detector**, A. Zielińska, W. Dąbrowski, T. Fiutowski, B. Mindur, P. Wiącek, AGH University of Science and Technology, Krakow, Poland

12.20–12.40 **The portraits of a group of professors from the collection of Collegium Maius painted by Jan Trycjusz: the significance of technological research in the attribution of these portraits**, Anna Jasińska, Museum of the Jagiellonian University, Krakow, Poland

12.40–13.00 **Conservation of the painting Three Philosophers by Bernardo Strozzi, on loan to the National Museum: an attempt to identify it as either a replica by the artist or a copy from his atelier, using x-ray tests**, Katarzyna Nowljaković, National Museum in Krakow, Poland

13.00–14.00 Lunch break

**Session 8** Chairman: Piotr Targowski, Nicolaus Copernicus University in Torun

14.00–14.30 **Glass through history: properties and characterisation**, Gilberto Artioli, Università di Padova, Dipartimento di Geoscienze, Italy

14.30–14.45 **Medieval stained glass panels from the Polish ‘Grodziec collection’ studied by means of XRF spectroscopy**, Małgorzata Walczak, Marta Kamińska, Marcin Sylwestrzak, Michał Płotek, Łukasz Ćwikliński, Ewa Kaszewska, Elżbieta Gajewska-Prorok, Anna Jasińska, Jolanta Pollesch, Paweł Karaszkiwicz, Piotr Targowski, Faculty of Conservation and Restoration of Works of Art, Jan Matejko Academy of Fine Arts, Krakow, Poland

14.45–15.00 **Assessment of the compatibility of historic lime mortars and injection grouts**, Karina Niedzielska, Grzegorz Adamski, Faculty of Conservation and Restoration of Works of Art, Jan Matejko Academy of Fine Arts, Krakow, Poland

15.00–15.15 **Composition of the primary inks in medieval palimpsests: effects of ink removal**, Zina Cohen, Emanuel Kindzorra, Oliver Hahn, Leif Glaser, Tomasz Łojewski, Ira Rabin, BAM Federal Institute for Materials Research and Testing, Berlin, Germany

15.15–15.30 *Mechanistic investigations into aging of plastic artefacts*, Krzysztof Kruczała, Michał Łukomski, Łukasz Bratasz, Anna Kłosowska, Angelika Gołąb, Aleksandra Borcuch, Zbigniew Sojka, Faculty of Chemistry, Jagiellonian University, Ingardena 3, 30–060 Krakow, Poland

15.30–15.45 *Application of modern analytical techniques in the evaluation of the side effects of conservation treatments*, Tomasz Łojewski, Damian Chlebda, Witold Zawadzki, Faculty of Chemistry Jagiellonian University, Krakow, Poland

15.45–16.00 **Closing remarks**

**19.00 Conference dinner**

### **17 May, Saturday**

#### **Session 9, Faculty of Chemistry, Jagiellonian University, Krakow, ul. Ingardena 3**

9.00–12.00

A. ‘How to do it?’ workshop in the scientific laboratories of the Faculty of Chemistry JU:

1. Application of hyperspectral imaging in the analysis of heritage objects
2. XRPD analysis in investigation of objects of cultural heritage
3. Light stability tests with a micro-fading spectrometer

B. Visit to the Salt Mine in Wieliczka

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