



EXRS 2006

European Conference on X-Ray Spectrometry

Paris, France - June 19-23, 2006

Conference Program

<http://www.nucleide.org/exrs2006>



LNHB



Welcome

It is the great pleasure of the Organizing Committee to welcome in Paris about 300 delegates representing 40 countries to the twelfth European Conference on X-Ray Spectrometry.

The scientific program consists of 12 invited lectures offered by distinguished scientists, 92 oral presentations (15 min) given by the participants, divided among 16 sessions.

More than 180 poster contributions have been received. The poster discussion is divided into three plenary sessions (Monday, Tuesday and Thursday afternoon) during which poster authors are requested to attend and discuss their exhibited work.

An exhibition of scientific instruments presented by more than 20 companies will take place during the first three days of the Conference.

Besides the intense academic program, the organizing committee has planned a varied social program for participants and accompanying persons.

Delegates are cordially invited to attend the Welcome reception (Sunday 18th), the cocktail hosted in the Hôtel de Lassay (Monday 19th), the guided tour to Versailles Castle (Wednesday 21st) and the Conference Dinner (Thursday 22nd). We also recommend enjoying the "Fete de la Musique" in the streets of Paris on the first day of summer (Wednesday 21st). Last, optional visits of SOLEIL Synchrotron and Louvre Museum Laboratory (C2RMF) are proposed on Friday 23rd.

The organizers acknowledge the support and assistance from all the sponsors, especially the Région Île-de-France, the Laboratoire National de Métrologie et d'Essais, the Soleil Synchrotron, the European Physical Society, the Centre National de la Recherche Scientifique-MIPPU and the International Atomic Energy Agency.

It is our sincere hope that each of you will benefit both scientifically and personally from your participation in EXRS 2006.

Marie-Christine Lépy and Alexandre Simionovici,
On behalf of the EXRS 2006 Organizing Committee

Local Organizing Committee

Co-chairs:

Marie-Christine Lépy*
Alexandre Simionovici**

Marie-Martine Bé*
Philippe Brun*
Philippe Casette*
Florence Chardonnet*
Bruno Chauvenet*
Christophe Dulieu*
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Jean Mittou***
Johann Plagnard*
Thierry Roll***
Malgorzata Tkatchenko***
Eric Verdeau*
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* CEA-LIST-LNHB : Laboratoire National Henri Becquerel

** CNRS-ENS : École Normale Supérieure de Lyon

*** CEA-LIST : Laboratoire d'Intégration des Systèmes et des Technologies

**** IAEA : International Atomic Energy Agency

International Advisory Committee

Burkhard Beckhoff	Germany
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Szabina Török	Hungary
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Conference secretariat

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Scientific program

The EXRS 2006 international conference will be the twelfth in a series of biennial conferences which bring together scientists from the various research fields of X-ray spectrometry, using photon beams, electrons or other energetic particles. The program will consist of 12 invited lectures (30 min) from distinguished scientists, 92 oral presentations (15 min) and more than 180 posters contributions, divided among 16 sessions.

List of sessions

Session 1 : Interaction of X-rays with Matter
Session 2 : Microbeam Techniques
Session 3 : Applications in Art and Archaeometry
Session 4 : Applications in Earth and Environmental Science
Session 5 : Synchrotron Radiation Instrumentation
Session 6 : X-ray Absorption Spectroscopy
Session 7 : Data processing
Session 9 : Applications in Materials & Nanotechnology
Session 10 : TXRF
Session 11 : New Instruments
Session 12 : Quantitation
Session 13 : X-ray Optics
Session 14 : New Detectors
Session 15 : X-Ray Imaging

Sponsors

We are grateful to the following institutions for supporting the Conference:

Région Île-de-France <http://www.iledefrance.fr/>

Laboratoire National de Métrologie et d'Essais <http://www.lne.fr/>

Synchrotron Soleil <http://www.synchrotron-soleil.fr/>

European Physical Society <http://www.eps.org/>

Centre National de la Recherche Scientifique – MIPPU <http://www.cnrs.fr/>

International Atomic Energy Agency <http://www.iaea.org/>



Invited Speakers

Gyula Faigel, Hungary Ten years of X-ray holography	Thursday	14:00
Paul Indelicato, France X-Ray standards: from X-ray tubes to highly-charged ions	Monday	9:30
Andreas-Germanos Karydas, Greece X-ray spectrometric methods towards an integrated, in situ analytical characterization of cultural heritage materials/artifacts. An overview	Wednesday	8 :30
Carlos Perez, Brazil Currently Research Activities in Environmental and Surface Science using Micro-XRF and Grazing-exit XRF Spectroscopy at the XRF beamline of the LNLS	Tuesday	8:30
John J. Rehr, U.S.A Theory and applications of X-ray absorption spectra	Tuesday	8:30
Joaquim dos Santos, Portugal Gas detector for X-ray spectrometry	Thursday	14:00
Eric Steel, U.S.A. X-ray Detectors: New Technologies, Capabilities and Challenges	Monday	9:30
Christina Strel, Austria Synchrotron radiation induced TXRF	Wednesday	8 :30
Kouichi Tsuji, Japan Grazing exit and micro wavelength dispersive X-ray spectrometry	Friday	9 :00
Bruno Vrebos, The Netherlands Quantitative XRF analysis of trace levels in geological materials	Thursday	8:30
Philippe Walter, France New trends on X-ray analysis of painting materials	Monday	14:00
Max Wilke, Germany Determination of oxidation states and speciation in geological relevant systems using XANES	Monday	14:00

Activities

Sessions and poster display will be held from Monday until Friday noon.
Industrial exhibition will last from Sunday afternoon until Wednesday at 12:00.

Sunday, June 18, Get-together reception 17:00 – 19:00

Monday June 19, Opening at 8:30 - Oral sessions from 9:30 - Poster session A - Cocktail

Tuesday June 20, Oral sessions from 8:30 - EXSA General Meeting - Poster session B

Wednesday June 21, Oral sessions from 8:30 – Tour to Versailles Castle

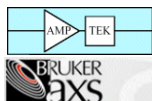
Thursday June 22, Oral sessions from 8:30 - Poster session C – Conference Dinner

Friday June 23, Oral sessions from 9:00 – Concluding remarks – Optional visits

Exhibition

The industrial exhibition will play a key role by presenting equipment and books related to X-Ray Spectroscopy and Imaging such as X-Ray sources, monochromators, optics, detectors. The exhibition starts on Sunday evening, together with the Welcome Reception. It will be open each day until Wednesday at noon. The list of exhibitors and sponsors is as follows:

Amptek Inc.	http://www.amptek.com/
Bruker AXS	http://www.bruker-axs.de/
Bruker AXS Microanalysis	http://www.bruker-axs-microanalysis.de/
Canberra	http://www.canberraeurisys.com/
E2V scientific instruments	http://www.e2vsi.com/
EDAX / Spectro France	http://www.edax.com/ http://www.spectro.fr/
Elexience	http://www.elexience.fr/
HORIBA Jobin Yvon	http://www.jobinyvon.com/
IfG – Institute for Scientific Instruments	http://www.ifg-adlershof.de/
Incoatec	http://www.incoatec.de/
Insidix	http://www.insidix.com/
John Wiley & Sons Ltd	http://www.wiley.com/
Ketek	http://www.ketek.net/
Moxtek	http://www.moxtek.com/
Newport Spectra-Physics	http://www.newport.com/
PANalytical	http://www.panalytical.com/
Rigaku Corporation	http://www.rigakumsc.com/
SEPH	http://www.seph.fr/
SII NanoTechnology USA Inc.	http://www.siintusa.com/
Thermo Electron Corporation	http://www.thermo.com/
Xenocs	http://www.xenocs.com/
XIA, LLC	http://www.xia.com/
X-Ray Optical Systems Inc.	http://www.xos.com/
Laboratoire National Henri Becquerel	http://www.nucleide.org/



Proceedings

The conference proceedings will be published on a CD-ROM and sent to participants after the conference. Any manuscript transmitted to the Conference Secretariat before July 3, 2006 will be automatically included, without any reviewing procedure. Here, there are no specific instructions about size or shape: the manuscript will be included such as the authors will have prepared it, under their own responsibility.

Authors of accepted contributions are invited to submit a manuscript for publication in a special issue of X-Ray Spectrometry (Wiley Interscience). All submitted papers will be reviewed according to the normal review procedure of the journal. Manuscripts should be prepared under the strict format described in "Instructions to authors" (<http://www3.interscience.wiley.com/cgi-bin/jabout/1870/ForAuthors.html>). Manuscripts can be either submitted at the conference registration desk or sent electronically at the address: "exrs2006@cea.fr".

Deadline for the manuscripts submission is **July 3rd, 2006**.

Oral Presentations

The time attributed to each oral presentation is 15 minutes + 5 min for questions. All technical material will be presented with a digital projector and a PC running Microsoft Powerpoint. Please create your presentation using the most recent version of software available.

Speakers are kindly asked to load their file onto presentation machines at least one session prior to the one in which they will make the oral presentation.

Speakers should be present at least 15 minutes before the beginning of the Session in which they will give their presentation in order to introduce themselves to the Session Chair.

Posters

The size of the display area for a poster is 1.00 m in width and 2.00 m in height. Posters will be on display from Monday morning until the end of the conference. Authors will have the opportunity to discuss their posters during one of the three poster sessions.

Awards

Award for Young X-Ray Spectrometrists

The European X-ray Spectrometry Association (EXSA) creates the Award for Young X-Ray Spectrometrists. The award ceremony will take place during the EXRS conference.

Best Poster awards

The best poster award prizes at EXRS will be a selection of Wiley books up to the value of 300 euros and copies of the 'Handbook of Practical X-ray Fluorescence Analysis' recently published by Springer.

Conference Venue

The conference is held in Paris, in the "Cité Internationale Universitaire". It is located in the south side of Paris, in front of the "Cité Universitaire" RER station, well connected by public transportation to the heart of Paris and to the airports.

The Cité Internationale Universitaire

Facing the Parc Montsouris, the "Cité Internationale Universitaire de Paris" is a not well-known site, but is nonetheless one of a kind. It was built around 1920, in the peacetime context between World Wars I and II. In this utopian place without frontiers, students, teachers and researchers from all around the world can meet and share their differences. A living place based on cultural mixture, this "garden city" is located in a 35-hectares park and hosts 5 000 students and researchers from 126 nations. Residents live in 37 houses, with various styles, constituting an authentic museum of 20th-century architecture.

The Maison Internationale

The "Maison Internationale" is the heart of the Cité and its building is inspired by the Fontainebleau castle. It will host the Conference and includes a student restaurant, a restaurant, wireless Internet access, cash dispenser, etc.

Social Events

Welcome reception

A get-together reception will be held on Sunday June 18th, from 17:00 to 19:00 at the Conference site, at which time the registration formalities will be performed.

Cocktail

The reception will be hosted on Monday 19th in the private rooms of the Hotel de Lassay, under the sponsorship of Mr Jean-Louis Debré, president of the National Assembly. Smart casual dressing is required.

Excursion to Versailles castle

A trip to Versailles castle is scheduled on Wednesday June 21st. It includes a guided tour of the Palace and free time for a walk in the gardens. Buses will depart from the west side of the Cité Internationale at 13:15 (Avenue David Weill)

Music day (Fête de la Musique)

Since 1982, June 21st is the date of the "Fête de la Musique" (Music Festival) Amateur musicians as well as professionals of all ages, as solos or as a band, play everywhere in the streets. You may hear any kind of music from classical to jazz, blues, rock or techno. Music Festival is an absolutely wonderful day to experience!

Conference dinner

The conference dinner will be held on Thursday evening, in the restaurant "Le Duplex", close to the Arc de Triomphe, at the top of the Champs Élysées.

Optional visits

Two different visits are proposed on Friday afternoon:

- SOLEIL synchrotron (Bus will depart from the Cité Internationale (Avenue David Weill) at 14:00)
- Louvre Museum laboratory (C2RMF)

There is a limited number of places for each visit. Please register at the secretariat desk.

17:00 - 19:00 : **Registration and Get-together reception**

MONDAY – JUNE 19, 2006 - MORNING

8:45 - 9:30 : **Welcome and Opening** *Pr. Bernard BIGOT, High Commissioner of Atomic Energy* **Adenauer**

Adenauer

Session 1 : Interaction of X rays with matter

Chair : Michael Mantler

9:30 - 10:00 (INV-1) : **Invited lecture:**
Paul INDELICATO
X-ray standards: from X-ray tubes to highly-charged ions

10:00 - 10:20 (O1-1) : **Double K-shell photoionization of magnesium and aluminium**
J.-Cl. Dousse, M. Berset, W. Cao, K. Fennane, J. Szlachetko, M. Szlachetko and J. Hozzowska

10:20 - 10:40 (O1-2) : **Broadening of diffraction profile caused by surface stress gradient and its study by Fourier analysis**
J.T. Assis, V.I. Monin, S.A. Philippov and S.M. Iglesias

10:40 - 11:00 : **COFFEE BREAK**

11:00 - 11:20 (O1-3) : **The energies and relative intensities of L and M lines in the low-energy range**
Ralf Terborg and Dieter Weirauch

11:20 - 11:40 (O1-4) : **Double 1s photoionization of Ca and V beyond maximum**
J. Hozzowska, J.-Cl. Dousse, M. Berset, W. Cao, K. Fennane, M. Kavic, J. Szlachetko and M. Szlachetko

11:40 - 12:00 (O1-5) : **A study of K X-ray satellites, hyper-satellites and KMM RAE structures of the elements $19 \leq Z \leq 25$**
B. Seetharami Reddy, S. S. Raju, M.V.R. Murti and L. S. Mombasawala

12:00 - 12:20 (O1-6) : **Studies of the L fluorescence lines of transition metals employing a soft X-ray wavelength-dispersive grating spectrometer**
M. Mueller, R. Fliegau, B. Beckhoff, B. Kanngießer, J. Weser, P. Honicke and G. Ulm

Honorat

Session 2 : Microbeam XRS techniques

Chair : Peter Wobrauschek

9:30 - 10:00 (INV-2) : **Invited lecture:**
Eric STEEL
X-ray detectors: New technologies, capabilities and challenges

10:00 - 10:20 (O2-1) : **Conceptual choices for micro XRF spectrometers**
Petra Hegeman

10:20 - 10:40 (O2-2) : **Characterization of microspot excitation for quantification in X-ray fluorescence analysis with X-ray tubes**
T. Wolff, O. Hahn, W. Malzer, U. Waldschläger and B. Kanngießer

10:40 - 11:00 : **COFFEE BREAK**

11:00 - 11:20 (O2-3) : **Investigation of XV century frescoes by means of SEM and microanalysis**
S. Bruni, M. Gagliardi, G. Maino and D. Biagi Maino

11:20 - 11:40 (O2-4) : **Development of confocal 3D micro XRF spectrometer with Cr-Mo dual excitation**
Kazuhiko Nakano, Xunliang Ding and Kouichi Tsuji

11:40 - 12:00 (O2-5) : **Determination of layer thicknesses of fuel cells by 3D micro X-ray fluorescence spectroscopy**
Birgit Kanngießer, Ioanna Mantouvalou, Yvonne Höhn, Lars Lühl and Wolfgang Malzer

12:00 - 12:20 (O2-6) : **Micro-XRF excitation in an electron microscope**
Michael Haschke, Tim Elam and Frank Egger

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Session 3 : Applications of XRS in Archaeometry

Chair : Not confirmed

14:00 - 14:30 (INV-3) : **Invited lecture:**
Philippe WALTER
New trends on X-ray analysis of painting materials

14:30 - 14:50 (O3-1) : **The use of a European coinage alloy to compare the detection limits of portable XRF systems. A feasibility study**
R. Cesareo, M. Ferretti, G. E. Gigante, G. Guida, P. Moiola, S. Ridolfi and C Roldán Garcia

14:50 - 15:10 (O3-2) : **SY-XRF study of silverpoint drawings of Hans Baldung Grien from the Karlsruher Skizzenbuch and the corresponding silver stylus (16th c.)**
I. Reiche, A. Berger, A. Duval, H. Guicharnaud, S. Merchel, M. Radtke, D. Schäfer and R. Simon

15:10 - 15:30 (O3-3) : **In site EDXRF archaeometric measurements of the golden globe on the top of San Peter dome in Rome**
Giovanni Ettore Gigante and Stefano Ridolfi

15:30 - 15:50 : COFFEE BREAK

15:50 - 16:10 (O3-4) : **The gilded bronze panels of the "Porta del Paradiso" by Lorenzo Ghiberti: Non destructive analyses using portable XRF**
Marco Ferretti and Salvatore Siano

16:10 - 16:30 (O3-5) : **Chemical and phase characterisation of ceramic pigments**
M.F. Gazulla, M.P. Gómez, A. Barba and M. Orduña

16:30 - 16:50 (O3-6) : **Obsidian provenance determination by using the beam stability controlled BSC-XRF spectrometer: The case of Milena (Sicily)**
F.P.Romano, G. Pappalardo, L.Pappalardo, V. La Rosa and O. Pallo

16:50 - 18:00 : **POSTER SESSION A (1,2,3,4)**

19:00 – 21 :00 : **Coktail (Hôtel de Lassay)**

Honorat

Session 4 : Applications of XRS in Earth and Environmental Science

Chair : Eva Selin-Lindgren

14:00 - 14:30 (INV-4) : **Invited lecture:**
Max WILKE
Determination of oxidation state and speciation in geologically relevant systems using XANES

14:30 - 14:50 (O4-1) : **In situ monitoring of microbial metabolism in diamond-anvil cell by X-Ray spectroscopy**
A.Picard, P. Oger, I. Daniel, A. Simionovici, I. Letard, J.-L. Hazemann and O. Proux

14:50 - 15:10 (O4-2) : **Combined micro-XRF/XRD studies of inclusions in diamonds from Juina and Kankan**
B. Vekemans, F. Brenker, L. Vincze, W. De Nolf, A. Szymanski, C. Vollmer and K. Janssens

15:10 - 15:30 (O4-3) : **High pressure - high temperature in-situ X-ray diffraction investigation of equation of state and rheology of serpentines, a material of geophysical importance**
Nadege Hilairat, Bruno Reynard, Isabelle Daniel, Sylvain Petitgirard and Yanbin Wang

15:30 - 15:50 : COFFEE BREAK

15:50 - 16:10 (O4-4) : **Microcharacterization and identification of tire debris of airplanes**
J. Osán, V. Groma, E. Sterfaniak, A. Worobiec, S. Török, M. Kalocsainé Rasztoeczy, S. Kugler and R. Van Grieken

16:10 - 16:30 (O4-5) : **Characterization of elemental contents in PM2.5 particles originating from a modern waste incineration plant by EDXRF analysis**
I. Joy Kwame Aboah, D. Henrikson, J. Laursen, M. Lundin, N. Pind, E. Selin Lindgren and T. Wahnström

16:30 - 16:50 (O4-6) : **Speciation of heavy metals by combined micro-XRF, -XANES and -XRD in polluted soil from the industrial site of Val Basento, Basilicata, Italy**
R. Terzano, M. Spagnuolo, P. Ruggiero, B. Vekemans, W. De Nolf, K. Janssens, S. Fiore and G. Falkenberg

Adenauer

Session 5 : XRS Instrumentation at Synchrotron Facilities

Chair : Alexei Erko

- 8:30 - 9:00 (INV-5) : **Invited lecture :**
Carlos PEREZ
Currently Research Activities in Environmental and Surface Science using Micro-XRF and Grazing-exit XRF Spectroscopy at the XRF beamline of the LNLS
- 9:00 - 9:20 (O5-1) : **Developments in data treatment of combined micro-XRF/XRD experiments**
W. De Nolf, K. Janssens, B. Vekemans, L. Vincze, F. Brenker, R. Terzano and G. Falkenberg
- 9:20 - 9:40 (O5-2) : **Non-destructive characterization of electrochemically deposited cobalt and copper tetrathiosulphophthalocyanine on gold electrodes by means of synchrotron X-ray microfluorescence and X-ray absorption spectroscopy**
K. Peeters, K. De Wael, A. Adriaens and L. Vincze
- 9:40 - 10:00 (O5-3) : **Micro X-ray fluorescence spectroscopy at the endstation of the new µSpot beamline at BESSY**
W. Malzer, B. Kanngießler, H. Riesemeier, M. Radtke, G. Weseloh and A. Erko
- 10:00 - 10:20 (O5-4) : **Synchrotron microXRF analysis of inorganic distributions in hair**
I. Kempson, W. Skinner, P. Kirkbride, D. Henry and R. Martin

10:20 - 10:40 : COFFEE BREAK

Session 7 : Data processing

Chair : Mathais Procop

- 10:40 - 11:00 (O7-1) : **The Monte Carlo - Library Least-Squares (MCLS) approach for the inverse XRF analysis problem**
Robin P. Gardner, Fusheng Li and Weijun Guo
- 11:00 - 11:20 (O7-2) : **A multiplatform X-ray fluorescence analysis toolkit**
V.A. Solé, E. Papillon, M. Cotte, P. Walter, I. Letard, R. Toucoulu and J.Susini
- 11:20 - 11:40 (O7-3) : **X-ray Fit - Windows based program for energy dispersive X-ray fluorescent analysis**
E. Nikolova, R. Valcheva and K Stoev
- 11:40 - 12:00 (O7-4) : **Evaluation of MCNP5 and EGS4 for the simulation of in-vivo strontium XRF measurements**
M. Zamburlini, S.-H. Byun, A. Pejovic-Milic, W. Prestwich and D. Chettle

Honnorat

Session 6 / I : X-ray absorption spectroscopy

Chair : Jun Kawai

- 8:30 - 9:00 (INV-6) : **Invited lecture:**
John J. REHR
Theory and Applications of X-ray Absorption Spectra
- 9:00 - 9:20 (O6-1) : **XAS analysis on mesoporous vanadium oxide thin films by sol-gel**
Alessandro Cremonesi, Gianluca Calestani, Giovanni Antonioli, Danilo Bersani and Pier Paolo Lottici
- 9:20 - 9:40 (O6-2) : **Investigation of copper pigments using X-ray absorption spectroscopy**
Oliver Hahn, Hartmut Kutzke and Max Wilke
- 9:40 - 10:00 (O6-3) : **XANES study of contamination and decontamination of copper in different soils by sorption and de-sorption**
Arvind Agarwal and R.K. Srivastava
- 10:00 - 10:20 (O6-4) : **Characterization of Cl-containing phases formed on archaeological artefacts using micro XAS**
Solenn Reguer, François Mirambet, Philippe Dillmann, Pierre Lagarde and Delphine Neff

10:20 - 10:40 : COFFEE BREAK

Session 6 / II : X-ray absorption spectroscopy

- 10:40 - 11:00 (O6-5) : **Micro-XRF imaging and micro-XANES analysis of arsenic hyperaccumulator fern (*Pteris vittata* L.) by using synchrotron radiation**
Hokura, T. Kashiwabara, R. Onuma, I. Nakai, N. Kitajima, Y. Terada, H. Saito and T. Abe
- 11:00 - 11:20 (O6-6) : **X-ray spectra, electron structure and valence state of the new ternary intermetallic compounds: theory and experiment**
I.D. Shcherba, M.D. Koterlyn, V.M. Antonov, B.M. Jatcyk, I. Kravchenko, L.O. Dobrjans'ka and L.P. Salamacha
- 11:20 - 11:40 (O6-7) : **XANES analysis of Fe valence in iron gall inks**
Iztok Arcon, Jana Kolar, Alojz Kodre, Darko Hanžel and Matija Strlic
- 11:40 - 12:00 (O6-8) : **Chromium speciation within BOF steel slag and under leaching conditions: A multi-techniques approach (micro-XRF, micro-XANES, XAS)**
P. Chaurand, J. Rose, O. Proux, J.-L. Hazemann, M. Salome, J. Susini, J. Domas and J.-Y. Bottero

TUESDAY – JUNE 20, 2006 – AFTERNOON

Adenauer

Session 8 : Applications of XRS in Life Science

Chair : Wojciech Kwiatek

13:30 - 13:50 (O8-1) : **In vivo determination of Pb in bone using L-shell excitation**

P. Wobrauschek, N. Cernohlawek, C. Strelj and N. Zöger

13:50 - 14:10 (O8-2) : **Trace elements accumulation in Middle Age human bones**

M. L. Carvalho and A. F. Marques

14:10 - 14:30 (O8-3) : **Inflammatory cells and pin lesions as primary factors in the development of prostate cancer**

Agnieszka Banas, Krzysztof Banas, Grzegorz Dyduch, Gerald Falkenberg and Wojciech M. Kwiatek

14:30 - 14:50 (O8-4) : **Diffraction enhanced imaging and X-ray fluorescence microtomography to analyse biological samples**

H. Rocha, G. Pereira, M. Anjos, P. Faria, C.s Pérez, G. Kellermann, I. Mazzaro, C. Giles and R. Lopes

14:50 - 15:10 : COFFEE BREAK

15:10 - 15:30 (O8-5) : **Characterization of breast tissue using energy-dispersive X-ray diffraction computed tomography**

Silvia Pani, Louise Jones, Jennifer Griffiths, Gary Royle, Robert Speller and Julie Horrocks

15:30 - 15:50 (O8-6) : **Trace elements analysis in normal and pathological human tissues using synchrotron X-ray fluorescence**

Aline S. S. Saddock, Regina C. Barroso, Marcelino J. Anjos and Ricardo T. Lopes

15:50 - 16:10 (O8-7) : **Research of trace element content in human myocardium by SRXRF**

Valentina Trunova, Galina Okuneva, Valentina Zvereva and Alexandr Chernyavskii

Honorat

Session 9 : Applications of XRS in Materials Science and Industry – Nanotechnology

Chair : René Van Grieken

13:30 - 13:50 (O9-1) : **Contributions of SyXRF to the certification of reference material**

M. Radtke, H. Riesemeier, A. Berger, W. Pritzkow, K. Ecker and W. Görner

13:50 - 14:10 (O9-2) : **Energy dispersive X-ray diffraction as a means to identify illicit materials: A preliminary optimization study**

Emily Cook, Julie Horrocks, Ruby Fong, David Wilkinson and Robert Speller

14:10 - 14:30 (O9-3) : **XRF for U, Pu, Np and Am measurements**

Said Abousahl, Ray Gunnink, Pavol Ragan and Herbert Ottmar

14:30 - 14:50 (O9-4) : **Direct determination of precious metals in automotive catalysts using high-energy polarized beam XRF**

Katleen Van Meel, Anne Smekens, Marc Behets, Paul Kazandjian and René Van Grieken

14:50 - 15:10 : COFFEE BREAK

15:10 - 15:30 (O9-5) : **Total reflection XAFS and in plane X-ray diffraction analyses of manganese oxide nanosheets**

Izumi Nakai, Katsutoshi Fukuda, Yasuo Ebina and Takayoshi Sasaki

15:30 - 15:50 (O9-6) : **Ultrasoft X-ray reflection and emission spectroscopic analysis of Al₂O₃/Si structure synthesized by ALD method**

E. O. Filatova, E. Yu. Taracheva, A. A. Sokolov, S.V. Bukin, A. S. Shulakov, P. Jonnard and J.-M. André

15:50 - 16:10 (O9-7) : **Standard and two-wavelength X-ray reflectometry for investigation of nano-size layers**

S. A. Aprelov, V. M. Senkov, N. N. Gerasimenko, A. G. Touriyanski and I. V. Pirshin

16:15 - 17:15 : **EXSA MEETING (Honorat)**

17:15 - 18:30 : **POSTER SESSION B (5,6,7,8,9) EXSA sponsored aperitif**

Adenauer

Session 10 : TXRF and related techniques

Chair : Maria Luisa Carvalho

- 8:30 - 9:00 (INV-10) : **Invited lecture:**
Christina STRELI
Synchrotron radiation induced TXRF
- 9:00 - 9:20 (O10-1) : **Total reflection X-ray analysis of bromate**
Nikolaos Kallithrakas-Kontos, Vasilios Hatzistavros, Pavlos Koulouridakis and Ioanna Aretaki
- 9:20 - 9:40 (O10-2) : **X-ray resonant Raman scattering below the Si-K absorption edge**
J. Szlachetko, R. Barret, M. Berset, J.-Cl. Dousse, K. Fennane, M. Szlachetko, J. Hoszowska, A. Kubala-Kukus and M. Pajek
- 9:40 - 10:00 (O10-3) : **Analysis of wine samples by means of total reflection X-ray fluorescence (TXRF) analysis**
Hagen Stosnach
- 10:00 - 10:20 : COFFEE BREAK
- 10:20 - 10:40 (O10-4) : **Total reflection X-ray fluorescence in metallomics: Partial characterization of metalloproteinase produced by *Tripanosoma cruzi***
Gabriela Niemirowicz, Juan J. Cazzulo, Graciela Custo and Cristina Vázquez
- 10:40 - 11:00 (O10-5) : **Speciation of nitrogen compounds in nanoscopic fine aerosol samples using TXRF-NEXAFS**
János Osan, Szabina Török, Burkhard Beckhoff, Jan Weser and Roger Fuoco
- 11:00 - 11:20 (O10-6) : **Recent progress in low power TXRF-spectrometer technique**
Ulrich Waldschlaeger

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Session 11 : New instruments

Chair : Benjamin Fraenkel

- 8:30 - 9:00 (INV-11) : **Invited lecture:**
A.G. KARYDAS
X-ray spectrometric methods towards an integrated, in situ analytical characterization of cultural heritage materials/artifacts. An overview
- 9:00 - 9:20 (O11-1) : **Combined μ -XRF/ μ -Raman vs. μ -XRD for pigment identification in illuminated manuscripts and paint multilayer samples**
Koen Janssens, Wout De Nolf, Bart Vekemans and Geert Van Der Snickt
- 9:20 - 9:40 (O11-2) : **Portable XRF analyzer with improved beam collimation for investigation of small electronic components and objects of art**
Stanislaw Piorek
- 9:40 - 10:00 (O11-3) : **The experimental model of the tunable source of monochromatic X-rays and possibility of its application for different types of X-ray analysis**
V. Baryshevsky, K. Batrakov, I. Feranchuk, A. Gurinovich, A. Grubich, A. Lobko, A. Rouba, B. Tarnopolsky, P. Safronov, V. Stolyarsky and A. Ulyanenko
- 10:00 - 10:20 : COFFEE BREAK
- 10:20 - 10:40 (O11-4) : **Calculation of X-Ray spectra emitted from a microfocus X-ray tube with X-ray optics**
Mathias Procop, Vasile-Dan Hodoroba, Aniouar Bjeoumikhov and Vladimir Arkadiev
- 10:40 - 11:00 (O11-5) : **Enhancing depth sensitivity in confocal XRF analysis and applications in mineralogy**
Rolf Simon, Usanee Kerdpin, Frank Friedrich, Werner Faubel, Peter Weidler and Rolf Nüesch
- 11:00 - 11:20 (O11-6) : **Analysis of Zn-Fe alloy coatings by using measurements under two take-off angles**
Yoshiyuki Kataoka, Hisayuki Kohno, Eiichi Furusawa and Michael Mantler

13:15 : Bus departure for Versailles Castle

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Session 12 : Quantitation

Chair : Not confirmed

- 8:30 - 9:00 (INV-12) : **Invited lecture:**
Bruno VREBOS
Quantitative XRF analysis of trace levels in geological materials
- 9:00 - 9:20 (O12-1) : **Effects of angles variability quantitative ED-XRF analysis**
Mario Milazzo, Antonio Maloni and Letizia Bonizzoni
- 9:20 - 9:40 (O12-2) **Enhancement of X-ray fluorescence of light elements by photoelectron secondary excitation**
B. Beckhoff, M. Gerlach, M. Kolbe, M. Müller, G. Ulm, A.G. Karydas, Ch. Zarkadas, T. Geralis, K. Kousouris, N. Kawahara, T. Yamada and M. Mantler
- 9:40 - 10:00 (O12-3) : **Extensions to the Sherman equation to handle finite volume effects in fundamental parameter methods**
Peter Brouwer
- 10:00 - 10:20 : COFFEE BREAK
- 10:20 - 10:40 (O12-4) : **Directly from the EDX spectrum to concentrations - A new approach for a universal calibration concept**
Kai Behrens, Arnd Bühler and Dominique Porta
- 10:40 - 11:00 (O12-5) : **Reference-free XRF quantification employing L-lines of heavy elements**
Michael Kolbe and Burkhard Beckhoff
- 11:00 - 11:20 (O12-6) : **Experimental measurements of target thickness**
A. Amokrane, S. Ourabah and M. Abdesselam
- 11:20 - 11:40 (O12-7) : **Density profile unfolding from Compton scattering measurements in reflection geometry**
Jorge E. Fernandez, Marco Badiali, Alessandro Guidetti and Viviana Scot

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Session 13 : X-Rays Optics

Chair : Jean-Claude Dousse

- 9:00 - 9:20 (O13-1) : **X-ray spectroscopy with double reflections in single crystals**
Benjamin S. Fraenkel
- 9:20 - 9:40 (O13-2) : **Multilayer interfacial mirrors as components for soft-X-ray WDS monochromators and tunable radiation sources**
Jean-Michel André, Philippe Jonnard and Rabah Benbalagh
- 9:40 - 10:00 (O13-3) : **Novel grazing incidence X-ray optics**
R. Hudec, L. Pina, L. Sveda, V. Semencova, A. Inneman, M. Skulinova, M. Mika, R. Kacerovsky and J. Sik
- 10:00 - 10:20 : COFFEE BREAK
- 10:20 - 10:40 (O13-4) : **Nanometer multilayers as monochromators for X-ray spectrometry**
Maik Menzel, Stefan Braun, Andreas Leson and Franz Schäfers
- 10:40 - 11:00 (O13-5) : **Shaped capillary X-ray lenses for μ XRF and μ EXAFS measurements**
A. Bjeoumikhov, N. Langhoff, M. Erko, S. Bjeoumikhova, A. Erko, I. Snigireva and A. Snigirev
- 11:00 - 11:20 (O13-6) : **Characterization of strongly focussing polycapillary half-lens**
Gerald Falkenberg, Koen Janssens, Viviana Scot, Karin Rickers, Ning Gao and David Gibson
- 11:20 - 11:40 (O13-7) : **Features of passage and focusing of X-ray beams in polycapillary nanostructures**
Muradin Kumakhov

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Session 14 : X-Rays Detectors

Chair : Not confirmed

- 14:00 - 14:30 (INV-14) : **Invited lecture :**
Joaquim DOS SANTOS
Gas detector for X-ray spectrometry
- 14:30 - 14:50 (O14-1) : **Silicon drift detectors refined on energy resolution, count rate performance and radiation entrance window**
H. Soltau, P. Lechner, A. Liebl, A. Niculae, R. Eckhard, G. Lutz, L. Strüder, C. Fiorini and A. Longoni
- 14:50 - 15:10 (O14-2) : **Improvements in silicon drift detectors**
O. Boslau, T. Eggert, P. Goldstrass, J. Kemmer, A. Pahlke, F. Wiest and M. Mikhailov
- 15:10 - 15:30 (O14-3) : **Fabrication of array detectors with one hundred superconducting-tunnel-junctions and Ta X-ray absorbers**
Masahiro Ukibe, Akihiro Kushino, Yiner Chen and Masataka Ohkubo
- 15:30 - 15:50 (O14-4) : **Detector driven performance in EDPXRF**
Joachim Heckel
- 15:50 - 16:10 (O14-5) : **Metallic magnetic calorimeters for high resolution spectroscopy**
A. Fleischmann, L. Gastaldo, H. Rotzinger, M. Linck, A. Burck, D. Haug, C. Enss, E. Leblanc and M. Loidl

16:10 - 16:30 : COFFEE BREAK

16:30 - 18:00 : **POSTER SESSION C (10,11,12,13,14,15,16)**

19:00 : **Conference Dinner (Restaurant "Le Duplex")**

Honorat

Session 15 : X-Rays Imaging

Chair : Not confirmed

- 14:00 - 14:30 (INV-15) : **Invited lecture :**
Gyula FAIGEL
Ten years of X-ray holography
- 14:30 - 14:50 (O15-1) : **Fluorescence tomography at the ESRF beamline ID22: Recent advances and future developments**
Pierre Bleuet, Priscillia Soudant and Alexandre Simonovici
- 14:50 - 15:10 (O15-2) : **Investigation on lecce stone porosity by means of micro and nano X-ray tomography**
Simone Bugani, Mara Camaiti, Luciano Morselli, Koen Janssens and Elke Van de Castele
- 15:10 - 15:30 (O15-3) : **Phase-contrast enhanced X-ray tomography of malaria transmitting mosquitoes**
D. Wegrzynek, E. Chinea-Cano, A. Markowicz, S. Bamford, B. Knols, M. Helinski, P. Wobruschek, C. Strelj, N. Zoeger, R. Simon, T. Weitkamp and C. Frieh
- 15:30 - 15:50 (O15-4) : **μ XANES spectroscopy applied to the study of original iron gall ink corroded manuscripts**
Cédric Burgaud, Wout De Nolf, Koen Janssens, Véronique Rouchon and Bart Vekemens
- 15:50 - 16:10 (O15-5) : **3D Micro XRS - Validation of a three-dimensional model of the sensitivity for quantification**
Ioanna Mantouvalou, Yvonne Höhn, Wolfgang Malzer and Birgit Kanngießer

16:10 - 16:30 : COFFEE BREAK

FRIDAY – JUNE 23, 2006 - MORNING

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Session 16 : WDXRS

Chair : Marek Pajek

- 9:00 - 9:30 (INV-16) : **Invited lecture:**
Kouichi TSUJI
Grazing exit and micro wavelength dispersive X-ray spectrometry
- 9:30 - 9:50 (O16-1) : **High-resolution wavelength-dispersive spectrometer**
Wolfgang Caliebe, Pavel Machek, Ulf Brueggmann and Edmund Welter
- 9:50 - 10:10 (O16-2) : **The WDS analysis at high spectral resolution: Application to the study of Mo/Si multilayers**
Philippe Jonnard, Hélène Maury and Jean-Michel André
- 10:10 - 10:30 (O16-3) : **Railway induced particulate emissions - A one year survey in Zurich, Switzerland**
C. N. Zwicky, P. Lienemann, R. Gehrig, M. Hill, A. Ulrich, A. Wichser and A. Maccagnan
- 10:30 - 10:50 : **COFFEE BREAK**
- 10:50 - 11:10 (O16-4) : **The wavelength dispersive synchrotron microprobe used for material analysis at ISASLine**
Alex Von Bohlen
- 11:10 - 11:30 (O16-5) : **High resolution study of X-ray resonant Raman scattering around the L₃ edge of Xe**
Matjaž Kavcic, Matjaž Žitnik, Klemen Bucar, Andrej Mihelic, Jure Kokalj and Jakub Szlachetko
- 11:30 - 11:50 (O16-6) : **Applications and uses of X-ray fluorescence for a cleaner safer and healthier environment**
Marc Dupuyrat, Didier Bonvin and Ravi Yellepeddi

Honorat

Session 17 : Pierre Chevallier honorary session

Chair : Alexandre Simionovici

- 9:00 - 9:30 : **Invited lecture:**
Pierre CHEVALLIER

12:00 - 12:30 : **CLOSING SESSION** - Concluding remarks : Burkhard Beckhoff Adenauer

14:00 : **Optional visits (SOLEIL Synchrotron– Louvre Museum Laboratroy)**

POSTER SESSIONS

MONDAY JUNE 19, 16:50 - 18:00 POSTER SESSION A (1,2,3,4)

Session 1 : Interaction of X rays with matter

- P1-1 **Study of angular, intensity and energy distribution of 279 keV gamma rays Compton scattered from K-shell electrons**
Bhajan Singh, Gurdeep Singh, B.S. Sandhu and B.S. Ghumman
- P1-2 **Chemical effects in the K X-ray emission spectra of sulfur**
Matjaž Kavcic, Jean-Claude Dousse, Jakub Szlachetko and Wei Cao
- P1-3 **Experimental determination of X-ray resonant Raman scattering cross-sections for several elements and compounds**
Héctor Jorge Sánchez, María Cecilia Valentinuzzi, José Abraham and Carlos Pérez
- P1-4 **Shapes of the K X-ray spectra of heavy atoms predicted on the basis of the MCDF calculations**
Maja Lewandowska-Robak and Marek Polasik
- P1-5 **Ionization equilibrium in multicharged ion plasma with fast electrons**
Vasily Zakharov and Vladimir Novikov
- P1-6 **A theoretical study of the X ray spectra emitted by chlorine ions in ECRIS plasmas**
J.P. Santos

Session 2 : Microbeam XRS techniques

- P2-1 **Comparison of back-foil SXRF and EPMA for the elemental characterization of thin coatings**
E. S. Valamontes and J. C. Statharas
- P2-2 **Depth Sensitive Investigation of Persian Tiles with 3D Micro X-ray Fluorescence Spectroscopy**
Y. Höhn, I. Mantouvalou, W. Malzer, B. Kanngießer, S. Röhrs, I. Reiche and F. Voigt
- P2-3 **Thickness determination of nano-layers - Challenges for coatings thickness analyses**
Wolfgang Klöck
- P2-4 **μ -XRF and μ -XANES at calcification fronts of human articular cartilage**
N. Zoeger, P. Wobrauschek, C. Strelj, C. Jokubonis, G. Pepponi, G. Falkenberg, R. Simon, P. Roschger and A. Tampieri
- P2-5 **Lime in the air: aerosol particles in the colombo region, south Brazil**
D M Braga, A F L Godoi, Y Makarovska, S Potgieter-Vermaak, B Alfoldy, S Torok, R Van Grieken, R H. M. Godoi

Session 3 : Applications of XRS in Archaeometry

- P3-1 **Bronze Age adobe bricks from Tureng Tepe (eastern Iran) : Mineralogical and geo-chemical characterisation**
Liliana Panei, Gilberto Rinaldi and Maurizio Tosi
- P3-2 **In situ analysis of Neolithic black and red rock art pigments from Saltadora caves (Spain) by portable EDXRF spectrometry**
C. Roldán, S. Murcia-Mascarós, J. Ferrero, V. Villaverde, R. Martínez, P. Guillem and E. López
- P3-3 **Some considerations on XRF use in museum measurements – The case of medieval silver coins**
B. Constantinescu
- P3-4 **Application of local X-ray Fluorescent analysis for paints element composition definition in paintings**
Alexander Scherbakov, A. Sineychuk and E. Lubavskaya

Program

- P3-5 **Non destructive semiquantitative analysis of Renaissance pictorial multilayers based on EDXRF analysis and reflectance spectroscopy**
L. Bonizzoni, A. Galli, G. Poldi and M. Milazzo
- P3-6 **Sulfur analysis on stone monuments by a field portable EDXRF system**
Maurizio Diana, Nazareno Gabrielli and Stefano Ridolfi
- P3-7 **The equestrian statue of Bartolomeo Colleoni: Diagnostic analysis by means of a portable EDXRF system**
Stefano Ridolfi, Roberto Cesareo and Maurizio Marabelli
- P3-8 **Non-destructive investigation of old graphics paper with the use of X-Art M analyzer**
S.V.Rimskaya-Korsakova, S.V.Sirro and A.S.Serebryakov
- P3-9 **Authentication of postal pieces by X-ray fluorescence analysis with spatial resolution**
Héctor Jorge Sánchez and María Cecilia Valentinuzzi
- P3-10 **XRF investigation of pigments in wall paintings by Parmigianino**
Gianni Antonioli, Danilo Bersani and Pierpaolo Lottici
- P3-11 **X-rays techniques for the study of laser cleaning of bronze and copper coins**
D. Aiello, A. Buccolieri, G. Buccolieri, A. Cassiano, A. Castellano, L. Sandra Leo, A. Lorusso, G. Nassisi, V. Nassisi, R. Ruco and L.Torrisi
- P3-12 **3D-micro-XRF/XANES, mobile XRF and micro-PIXE of persian tiles of the Qajar period (2nd half of the 19th c.)**
I. Reiche, S. Röhrs, F. Voigt, Y. Höhn, I. Mantouvalou, W. Malzer and B. Kanngießner
- P3-13 **Quantitative elemental analysis of Della Robbia's glazes with a portable XRF spectrometer and its comparison to PIXE methods**
A. Gianoncelli, J. Castaing, A. Bouquillon, A. Polvorinos and P. Walter
- P3-14 **Measurement of gold leaf thickness by attenuation or self-attenuation of X-rays**
Roberto Cesareo, Stefano Ridolfi, Marina Donativi and Stefano Quarta
- P3-15 **Analysis of Illyrian terracotta figurines of Aphrodite and other ceramic objects using EDXRF spectrometry**
Nikolla Civici
- P3-16 **X-ray fluorescence analysis of pigments used for the painting "San Felice in trono" by Lorenzo Lotto**
F. Adducci, A. Buccolieri, G. Buccolieri, A. Castellano, R. Cesareo, L. Sandra Leo, F. Vona and F. Lofano
- P3-17 **Extracting information of an work of art: "The horse of Grenadier"**
Alba Obrutsky, Graciela Custo, Ana María Maury and Cristina Vázquez
- P3-18 **Suitability of the Niton-XLP analyser for in-situ PXRF analysis of panel paintings**
G. Van Der Snickt, O. Schalm, K. Janssens, W. De Nolf, B. Vekemans, L. Klaassen, Y. Deckers, P. Huvenne, P.Eyskens and O. Kerker
- P3-19 **XRF applied to archaeological samples**
Adolfo Esposito, Giorgio Cappuccio, Federica Gonnella, Astrik Gorghinian and Alessandro Jaia
- P3-20 **XRF applications in archaeometry: Analysis of Marajoara pubic covers and pigments from sarcophagus cartonage of an Egyptian mummy**
C. Calza, M.J. Anjos, M.I. M.S. Bueno, S. Mendonça de Souza, T. A. Lima and R. Tadeu Lopes
- P3-21 **Synthesis and characterization of organic-inorganic composites : From "Maya Blue" to modern hybrids**
E. Dooryphee, P. Martinetto, P. Strobel, C. Dejoie, M. Sanchez del Rio and F. Porcher

Program

- P3-22 **The suitability of XRF analysis for the classification of archaeological ceramics, as compared to INAA**
R. Padilla Alvarez, P. Van Espen and P. P. Godo Torres
- P3-23 **In situ XRF study of the XV c. mural paintings in the Town Hall of Gdansk**
Aleksandra Kaminska, Mirosław Sawczak, Marco Ferretti and Gerard Sliwinski
- P3-24 **XRF and microPIXE study of calcite samples from the Paleolithic rock art cave Arcy-sur-Cure (Yonne, France, 24000-28000 BP)**
E. Sansot, D. Baffier, E. Chalmin, L. Charlet, M. Menu, G. Oriol, F. d'Orlyé and I. Reiche
- P3-25 **μ -PIXE/PIGE analysis of effects of diagenesis and consolidation treatments on trace elemental distribution in Palaeolithic reindeer antlers**
Céline Chadeveau, Ina Reiche, Laurent Pichon and Céline Aballea
- P3-26 **Access to the Louvre IBA facility through the Eu-ARTECH European program**
Stefan Roehrs, Joseph Salomon, Lucile Beck, Jean Claude Dran, Thierry Guillou, Michel Menu, Brice Moignard, Laurent Pichon, Philippe Walter

Session 4 : Applications of XRS in Earth and Environmental Science

- P4-1 **Analysis of the invasion profile due to drilling fluid mudcake filtration by X-ray microfluorescence using synchrotron radiation**
João Luis Ribeiro, Ricardo Lopes, Marcelino Anjos, João Queiroz Neto and Luis Bianco
- P4-2 **Analysis of rock-geological material from places in Tanzania by wavelength-dispersive X-ray fluorescence spectrometer**
Y.I.A Koleleni
- P4-3 **The use of small-spot EDXRF for the study of core sediments geochemistry**
Ignacio Queralt, Oscar Gonzalez, Ramón Julià, Gregorio García and Jose Ignacio Manteca
- P4-4 **Applications of a 10 μ m spot size laboratory micro-XRF to environmental sciences**
J. Rose, P. Chaurand, A. Bénard, P. Böning, C. Suavet, J. Gattacceca, E. Doelsch, D. Borschneck, J.-P. Ambrosi, E. Bard, P. Rochette and J.-Y. Bottero
- P4-5 **Evaluation of distribution and bioavailability of Cr, Mn, Fe, Cu, Zn and Pb in water of the upper course of the Lerma river**
P. Avila-Pérez, G. Zarazúa, S. Tejeda, I. Barceló-Quintal and C. Díaz-Delgado
- P4-6 **Temporal and spatial abundance of particles in suspended matter of water from Lerma River in Mexico**
G. Zarazúa, P. Avila-Pérez, L. Carapia, S. Tejeda and J. A. García-Aragón
- P4-7 **XRS method and device for fast determination of metals in used timber**
Horst Guenther, Bernhard Koch, Hans Miessner and Thomas Dobe
- P4-8 **Analysis for cleaning and protection from vandals' smear on stone-like materials avaling of a specifically assembled portable EDXRF system**
Stefano Ridolfi, Roberto Cesareo and Giorgio Cerichelli
- P4-9 **Elemental content of PM2.5 aerosol particles at different locations in and around Göteborg during February 2005**
Johan Boman, Ardhendu Shannigrahi, Annemarie Wagner and Michael J. Gatari
- P4-10 **Single-particle characterization of NIST-SRM 70a (potassium feldspar) using low-Z particle EPMA**
M.S.I. Khan, H. Hwang, H. Kim, and C.-U. Ro
- P4-11 **Single-particle characterization of seasonal aerosol samples collected at a subway station platform in Seoul, Korea**
S. Kang, H. Hwang, Y. Park, E. Choi, M.S.I. Khan, H. Kim, and C.-U. Ro

Program

- P4-12 **Single particle characterization of aerosol samples collected during an "Asian Dust" storm event in 2004, using low-Z particle electron probe X-Ray microanalysis**
H. Hwang, M.S.I. Khan, H. Kim, and C.-U. Ro
- P4-13 **Suspended particles in a water supply reservoir: A case study of the Passauna reservoir at Curitiba, southern Brazil**
D.G. Meger, A.V.L. Bitterncourt, A.F.L. Godoi, S. Potgieter-Vermaak, P.E.D. Lagos, C.M.S. Carneiro, Y. Makarovska, R. Van Grieken and R.H. M. Godoi
- P4-14 **Calibration of an energy dispersive X-ray fluorescence facility for the analysis of environmental samples**
P. K. Rouni, M. J. Anagnostakis and S. E. Simopoulos
- P4-15 **Cadmium and chromium (VI) determination by small-spot EDXRF after membrane concentration**
Clàudia Fontàs, Eva Marguí, Manuela Hidalgo and Ignacio Queralt
- P4-16 **Comparison between indoor-outdoor atmospheric particulate matter using the evaluation of inorganic composition aerosols by different X-ray techniques**
G. I. Alcaraz Bañuelos, M. Delgado, A. Campos, C. Solis and E. F Herrera
- P4-17 **Elemental composition of vegetables in the Dar es Salaam market using wavelength dispersive X-ray fluorescence analysis**
Y.I.A Koleleni
- P4-18 **Comparison of four different filter materials for aerosol analysis with XRF**
Yaroslava Makarovska, Katleen Van Meel, Anna Worobiec and Rene Van Grieken
- P4-19 **Concentration of some elements in the Adriatic coastal sea sediments: Case study the Kvarner bay**
Vladivoj Valkovic, Jasmina Obhodas and Mladen Crnjar
- P4-20 **Geochemical mapping of Croatian soils obtained by GPS-GIS supported XRS methods**
Jasmina Obhodas, Darko Tiplja and Vladivoj Valkovic
- P4-21 **EDXRF monitoring of element transport in column experiments**
Dieter Rammlmair
- P4-22 **Non destructive X-ray and neutron techniques for assessing environmental impact of uranium at the premises of remediated Hungarian uranium mine**
Anita Alsec, Janos Osán, József Pálfalvi, Szabina Török and Gerald Falkenberg
- P4-23 **Capabilities of microanalytical methods for uranium analysis of individual mine tailings particles**
A. Alsec, J. Osán, B. Alföldy, S. Török, A. Varhegyi, E. Stefaniak, A. Worobiec and R. Van Grieken
- P4-24 **Possibilities of XRF spectrometry for trace element analysis of vegetation samples in environmental studies**
Eva Margui
- P4-25 **Heavy metal analysis on candles**
Nikolaos Kallithrakas-Kontos and Rumpini Moschochoritou

TUESDAY JUNE 20, 17:15 – 18:30 POSTER SESSION B (5,6,7,8,9)

Session 5 : XRS Instrumentation at Synchrotron Facilities

- P5-1 **Adaptive matched filtering of XRF detector signals**
Georgi Georgiev and Ivaylo Peev
- P5-2 **Application of Kumakhov's polycapillary optics for synchrotron radiation focusing**
Oleg Mikhin
- P5-3 **Properties of polymer X-ray refractive lenses for spectroscopy**
A. Last, V. Nazmov, E. Reznikova and J. Mohr
- P5-4 **Polarization dependence of X-ray reflection and absorption spectra of hexagonal CdS crystal in the energy region of S L_{2,3}- and Cd M_{4,5}-edges**
E. Yu Taracheva, E.O. Filatova and J.-M. André
- P5-5 **Present Status and upgrading project of X-ray fluorescence beamline at BSRF**
Yuying Huang, Wei He, Wei Hua and Tiandou Hu
- P5-6 **Metrology and Test beamline at SOLEIL**
M. Idir, P. Mercere, T. Moreno, A. Delmotte, M.-C. Lépy, J. Plagnard, P. Stemmler and G. Soullié
- P5-7 **Combination of micro X-ray techniques: The synchrotron Radiation Laboratory for Environmental Studies at ANKA**
Jörg Göttlicher, Ralph Steininger and Rolf Simon
- P5-8 **XSW - X-ray standing waves in simulation and experiment**
Markus Krämer, Alex Von Bohlen, Christian Sternemann and Roland Hergenröder

Session 6 : X-ray absorption spectroscopy

- P6-1 **Chemometrics based XAS characterization of titanium on titanium-oxide-modified chromatographic silica**
Karen Goraieb, Kenneth E. Collins and Maria Izabel M.S Bueno
- P6-2 **Double acceptor levels in the band gap of boron-doped diamond semiconductors analyzed by soft X-ray absorption spectroscopy and DV-XA calculations**
Y. Muramatsu, T. Takebe, A. Sawamura, J. Iihara, A. Nanba, T. Imai, J. D. Denlinger and R. C. C. Perera
- P6-3 **Speciation of carbonitride nanolayers**
O. Baake, P. Hoffmann, A. Klein, W. Ensinger, B. Beckhoff, B. Pollakowski, J. Weser, G. Ulm, N. Fainer, M. Kosinova and V. Trunova
- P6-4 **XANES analysis of Ru valence in La₂RuO₅**
Iztok Arcon, Andreja Bencan, Marija Kosec and Alojz Kodre
- P6-5 **X-ray spectrometry with highly oriented pyrolytic graphite (HOPG)**
H. Legall, H. Stiel, V. Arkadiév and A. Bjeoumikhov
- P6-6 **Long term corrosion mechanisms of iron in atmosphere - X-ray absorption analyses of archaeological corrosion layers**
D. Neff, J. Monnier, S. Reguer, L. Bellot-Gurlet, L. Legrand, F. Mirambet and P. Dillmann
- P6-7 **Environmental analyses by combining TXRF-NEXAFS and IR-spectroscopy: Speciation of bromine in organics and characterization of the organic matrix**
B. Beckhoff, O. Hahn, J. Weser, M. Wilke, G. Ulm and O. Jann

Program

- P6-8 **XAFS studies of the local structure of Mn doped magnetic semiconductors**
I. N. Demchenko, K. Lawniczak-Jablonska, J. Sadowski, M. Klepka and A. Wolska
- P6-9 **XAS investigation of Fe ions in chitosan complexes**
M. Klepka, K. Lawniczak-Jablonska, N. Nedelko, A. Sławska-Waniewska, M. Walczak, C.A. Rodrigues and C. Bordini
- P6-10 **The speciation of iron in minerals using the L_{3,2} edges measured by XRF-NEXAFS**
Max Wilke, Burkhard Beckhoff, Isabel Sommerweiß and Gerhard Ulm
- P6-11 **EXAFS technique in use to investigate local iron neighbourhood inside compounds applicable in cancer therapy**
M. Walczak, K. Lawniczak-Jablonska, M. Czuba, M. Klepka, A. Graczyk and S.Nikitendo
- P6-12 **Temperature and pressure dependence of the Yb valence state of some intermetallic Yb-Tm-Ga phases**
U. Burkhardt, R. Gumeniuk, M. Schmidt, W. Schnelle, Y. Prots, L. Vasylychko and Y. Grin
- P6-13 **Local structures in Pb_{1-x}Mn_xTe systems**
I.Radisavljevic, N. Ivanović, N. Novaković, N. Romčević and H.-E. Mahnke
- P6-14 **XAFS study of nanocomposite system for syngas production**
V.V. Krivenstov, D.I. Kochubey, Y.V. Frolova, V.A. Sadykov and S.G. Neophytides
- P6-15 **Study of CNF supported Co(Ni)-Mo catalytic system used for HDS by EXAFS and XANES**
V.V. Krivenstov, Z.R. Ismagilov, D.I. Kochubey, O. Yu Poduacheva, A.E. Shalagina and A.N. Startsev
- P6-16 **XAFS study of titania and titania-silica supported systems**
V.V. Krivenstov, D.I. Kochubey, M. Tsodikov, J.A. Navio, G. Colon, M.C. Hidalgo, J.M. Marin and G. Restrepo

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Liqiang Luo, X. Zhan and Y. Li
- P7-2 **Fundamental parameter method using scattering X-rays and Monte Carlo simulation**
N. Kawahara, Y. Kataoka, S. Hara, Y. Yamada, T. Matsuo and M. Mantler
- P7-3 **Use of the theoretical simulation in the choice of XRF technique of analysis with the synchrotron radiation**
Anatoly Revenko
- P7-4 **Simple method to improve a detection system resolution**
Alexander Serebryakov
- P7-5 **Application of the Monte Carlo method to X-ray unfolding: Comparison between germanium and silicon detectors**
Sergio Gallardo, José Rodenas, Gumersindo Verdu, Jorge E. Fernandez
- P7-6 **Performances of calibrations and validation: influence of EDXRF measuring time**
L. Perring and C. Servais

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Astghik Pepoyan, Larisa Kirakosyan, Margarita Hovnanyan and Karlen Hovnanyan
- P8-2 **Characterization of osteoporotic bone structures by bidimensional images through X-ray microfluorescence with synchrotron radiation**
Inayá Lima, Marcelino Anjos, Renata Serpa, Maria Lucia Fleiuss, Doris Rosenthal and Ricardo Lopes
- P8-3 **Elemental concentration bidimensional mapping in the brain of Wistar rats by X-ray microfluorescence with synchrotron radiation**
R. F.B. Serpa, E. F.O. de Jesus, M. J. dos Anjos, L. F. de Oliveira, M. G.T. do Carmo, A. M.B. Martinez, J. D. Corrêa Júnior and R. T. Lopes
- P8-4 **The investigations of iron local environment in human brain tissue using XAFS technique - Preliminary results**
S. Wójcik, M. Szczerbowska-Boruchowska, M. Lankosz, C. Kapusta, M. Borowiec, D. Adamek and K. Klementiev
- P8-5 **Trace elements in human brain**
A. F. Marques and M. L. Carvalho
- P8-6 **Broad beam- and micro-PIXE analysis of normal and in vitro demineralized dental enamel**
Eugen A. Preoteasa, Elena Preoteasa, Livia Harangus, Dieter Grambole and Folker Herrmann
- P8-7 **Micro-XANES investigations of Cu and Fe oxidation state inside single neurons from substantia nigra of Parkinson's diseased patient**
J. Chwiej, M. Szczerbowska-Boruchowska, M. Lankosz, S. Wojcik, D. Adamek, A. Krygowska-Wajs, G. Falkenberg and S. Bohic
- P8-8 **Trace element analysis of biologic samples using energy-dispersive X-ray fluorescence and total reflection X-ray fluorescence**
Annemarie Wagner, Johan Boman and Michael J. Gatari
- P8-9 **Detection of mercury in the kidney via source-excited X-ray fluorescence**
Joanna Grinyer, Marija Popovic and David R. Chettle
- P8-10 **Semi-quantative analysis of Fe, Cu and Zn concentration in breast cancer**
MP Silva, ALC Conceição, A Tomal, CA Pérez, A Ribeiro-Silva and ME Poletti
- P8-11 **X-ray scattering profiles of some normal and malignant human breast tissues**
D.M. Cunha, O.R. Oliveira, C.A. Pérez and M.E. Poletti
- P8-12 **Monitoring plasma and skin iron concentrations in human metabolic disorders**
M. A. Barreiros, C. Ralheta, T. Pinheiro, L. C. Alves, P. Filipe, J.N. Silva, R. Silva and R. Fleming
- P8-13 **Quality control of reference, generic, similar amoxicillin and diclofenac by X-ray scattering and chemometrics**
Simone S. de Oliveira Borges and Maria Izabel M. S. Bueno
- P8-14 **Study of the effects of chronic arsenic poisoning in rat organs by means of synchrotron microscopic X-ray fluorescence analysis**
Roberto D. Perez, Marcelo Rubio, Carlos A. Perez, Aldo H. Eynard, Guillermina A. Bongiovanni
- P8-15 **Two-dimensional elemental mapping by μ -SRXRF in liver slices with continuous scanning mode**
Gerald Falkenberg, Romana Höftberger, Friedrich Wrba and Wolf Osterode
- P8-16 **The effect of correlation between the K-alpha and the K-beta lead peak concentrations on the uncertainty in the result of in vivo 109Cd KXRF bone lead measurement**
Jose Brito

- P8-17 **Characterization of cataract in dogs; trace element concentration for mature and immature cataract**
Andrea Antunes and Maria Luisa Carvalho

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Vladimir Egorov and Evgeniy Egorov
- P9-2 **Applications of two-wave X-ray reflectometry in study of nanostructures**
Alexander Touriyanski, M.A. Khumakov, A.G. Touriyanski, I.V. Pishin and P.N. Lebedev
- P9-3 **X-ray fluorescence analysis of steel using VERBA-XRF conception**
Petro Verkhovodov
- P9-4 **Analysis of alternative fuel in the cement industry**
Clemens Schaefer and Dirk Wissmann
- P9-5 **Analysis of honey by X-ray spectroscopy allied to chemometrics**
Gisele G. Bortoleto, Simone S. O. Borges, Maria Helena L. do Rego and Maria Izabel M. S. Bueno
- P9-6 **X-ray spectroscopy and multivariate analysis in investigating counterfeit coins**
G. G. Bortoleto, R. C. Rossi, S. G. Guadagnin, L. C. M. Pataca, S. Rath and M. I. M. S. Bueno
- P9-7 **Determination of varnishes nonvolatile matter using XRS and PLS**
Fabiola M. Verbi Pereira and Maria Izabel M. S. Bueno
- P9-8 **Calibration and classification of sugars using chemometrics tools and X-ray spectrometry**
Karen Goraieb, Thais L. Alexandre and Maria Izabel M. S. Bueno
- P9-9 **Preparation and certification of the new reference materials; plastics (disk form, JAC 0621 - 0625) for determination of mercury using X-ray fluorescent analysis**
K. Nakano, K. Tsujii, T. Nakamura, I. Nakai, A. Kawase, M. Imai, M. Hasegawa, Y. Ishibashi, I. Inamoto, K. Sudou, M. Kozaki, A. Turuta, A. Ono, K. Kakita and M. Sakata
- P9-10 **SAIME: Study and development of innovative analysis methods for determining gold in precious metal alloys by EDXRF**
Stefano Ridolfi, Michele Tosti, Filippo Niccolai, Roberto Stancampiano and Elio Poma
- P9-11 **Development of two analytical methodologies for quantitative determination of total Cd, Cr, Hg, Pb in fluorinated materials by means of WDS-XRF spectroscopy**
Elena Cattaneo, Domenico Ferrari and Giuliana Geniram
- P9-12 **Quantitative and standard-less analysis of high alloy steel by wavelength dispersive X-ray fluorescence spectroscopy (WD-XRF)**
S. M. A. Iqbal and A. Butt
- P9-13 **Accurate analysis of light element samples by evaluation of the complete scattered background spectrum**
Bernhard Nensel
- P9-14 **The effect of nonhomogeneity of gold and platinum alloys using ED-XRF analysis**
V. Rößiger
- P9-15 **Optimized procedures for trace analysis in (liquid or loose powder) samples of light matrices**
Kai Behrens, Arnd Bühler and Dominique Porta
- P9-16 **Structure and physico-chemical properties of metal containing nano-composites based on polymer and porous glasses**
Leonid Trakhtenberg, Genrikh Gerasimov, Vladimir Gromov and Aleksandr Morovov

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- P9-17 **Asphaltene determination in crude oil by X-ray scattering spectrometry allied to chemometrics**
Claudete Bernardo Henriques and Maria Izabel Maretti Silveira Bueno
- P9-18 **Microstructural characterisation of eutectoid and TRIP steels by EDS, EBSD XRD and thermoelectric analysis**
Janos Dobranszky
- P9-19 **Use of WDXRF and XRD to assess the content and chemical form of metals in automotive shredder residues (ASR)**
Oscar Gonzalez, Ignacio Queralta, Jordi Soler and Manuela Hidalgo

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T. Martinez, J. Lartigue, P. Avila-Perez, G. Zarazua, M. Navarrete, S. Tejada and L. Cabrera
- P10-2 **TXRF analysis on activated reflectors**
Nikolaos Kallithrakas-Kontos, Ioanna Aretaki, Pavlos Koulouridakis and Vasilios Hatzistavros
- P10-3 **Evaluation of the contamination and bioavailability of heavy metals in lake sediments using SR-TXRF**
A. E. Sirito De Vives, S. Moreira, S. M. Boscolo Brienza, O. L. A. D. Zucchi and V. F. Do Nascimento Filho
- P10-4 **Determination of trace elements in tree-rings by synchrotron radiation total reflection X-ray fluorescence analysis (SR-TXRF)**
A. E. Sirito de Vives, S. Moreira, S. M. Boscolo Brienza, J. G. S. Medeiros, M. Tomazello Filho, O. L. A. D. Zucchi and V. F. Do Nascimento Filho
- P10-5 **Study of the heavy metal removal in Wetlands by SR-TXRF**
S. Moreira, A. Mello Jr, E. A. Nour, A. E. S Vives, R. C. Barroso, O. L. A. D. Zucchia and V. F. Nascimento Filho
- P10-6 **Study of the removal of heavy metals in a slow filtration system by SR-TXRF**
S. Moreira, A. Mello Jr, E. A. Nour, A. E. S Vives, R. C. Barroso, O. L. A. D. Zucchia and V. F. Nascimento Filho
- P10-7 **Ultra-trace analysis and speciation by TXRF-NEXAFS in the soft X-ray range**
B. Beckhoff, R. Fliegau, M.Kolbe, M. Müller, J. Weser and G. Ulm
- P10-8 **Application of the TXRF for analysis of the plants cultivated on post industrial zinc wastes**
Beata Ostachowicz, Katarzyna Turnau and Teresa Anielska
- P10-9 **Uncertainty evaluation in seawater analysis by TXRF**
C. Ralheta, M. A. Barreiros, M. A. Trancoso and M. F. C. Camões
- P10-10 **Analysis of low Z elements in biofilms directly cultivated on the TXRF quartz carrier plates**
H. Hoefler, C. Strelj, P. Wobrauschek, M. Óvári and Gy. Záray
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Patricia Piccirilli, Néstor Caracciolo, Susana Boeykens, Cristina Vázquez and Marta Rosen
- P10-12 **Honey characterization by using total reflection X-ray fluorescence: Evaluation of the environmental quality and risks for the human health**
Graciela Custo, Susana Boeykens, Néstor Caracciolo, Martha Ortiz and Cristina Vázquez
- P10-13 **Micro total reflection x ray fluorescence (micro-TXRF)**
Kouichi Tsuji, Keita Tanaka, Yosuke Nishida, Kazuhiko Nakano and Ken-ichi Sasaki
- P10-14 **Trace element analysis of fine aerosol particles with high time resolution using SR-TXRF**
V. Groma, J. Osán, S. Török, C. Strelj, P. Wobrauschek, F. Meirer and G. Falkenberg
- P10-15 **Analysis of geometric-dependent effects on TXRF measurements by Monte Carlo Simulation**
Eduardo Passos Belmonte, Delson Braz, Regina Cély Barroso, Silvana Moreira and Ricardo Tadeu Lopes
- P10-16 **Arsenic speciation in cucumber (*Cucumis sativus* L.) xylem sap by K-edge TXRF-XANES**
F. Meirer, G. Pepponi, C. Strelj, P. Wobrauschek, V.G. Mihucz, G. Zaray, V. Czech, J. Broekaert, U. Fittschen and G. Falkenberg

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- P11-2 **High energy resolution X-ray fluorescence microanalysis by energy dispersive spectrometer with superconducting detector**
R. Cristiano, A. Casaburi, C. Santagata and J. Hohne
- P11-3 **X-ray fluorescent analysis at sample excitation by secondary target radiation**
M.G. Vasin, Yu.V. Ignatyev, A.E. Lakhtikov, A.P. Morovov, L.I. Trakhtenberg and V.V. Nazarov
- P11-4 **Energy dispersive X-ray diffraction in contradistinction to angle dispersive methods**
A. Gianoncelli, P. Walter, E. Dooryhée, L. Ortega, P. Bordet and J. Castaing
- P11-5 **Diamond prism X-ray spectrometer**
Alexander Touriyanski and Igor Pirshin
- P11-6 **New highly effective X-ray complexes (XRF+XRD) on the basis of Kumakhov's polycapillary optics**
Ekaterina Likhushina, S.V. Nikitina and N.S. Ibraimov
- P11-7 **Kumakhov's polycapillary X-ray optics in manual X-ray fluorescent analyzer**
Victor Mikhin, O. Matveeva, B. Vasiliev, V. Ivanov and N. Avontynsh
- P11-8 **X ray capillary optics: Status and perspective**
Semfira Bjeoumikhova, Aniouar Bjeoumikhov, Heinrich Riesemeier and Martin Radtke
- P11-9 **Applications of capillary optics for XRF and XRD**
Aniouar Bjeoumikhov and Semfira Bjeoumikhov
- P11-10 **Ring anode X-ray source for the image X-ray fluorescence spectrometer (IXRF) combined with multi-channel plate (MCP) optics**
Huawei Su, George W. Fraser and James F. Pearson
- P11-11 **Portable micro-XRF equipment with a polycapillary conic collimator**
Roberto Cesareo, Antonio Brunetti, Aniouar Bjeoumikhov, Norbert Langhoff and Stefano Ridolfi
- P11-12 **Accurate efficiency calibration of low-energy HPGe detector using monochromatic X-ray source**
Johann Plagnard and Marie-Christine Lépy
- P11-13 **X-Ray fluorescence measurement with a small glass X-Ray tube for photoionizer**
Jun Kawai, Kohji Matsuda and Toyohide Hayashi
- P11-14 **The advantages of using digital signal processing in polarized X-ray fluorescence analysis**
R. Padilla Alvarez, P. Van Espen and J.R. Estévez Alvarez

Session 12 : Quantitation

- P12-1 **Quantification using a portable milli-beam XRF spectrometer**
Ch.Zarkadas, A.G. Karydas and V. Kantarelou
- P12-2 **Quantitative in situ XRFA: Monte Carlo approach in validity examination**
Tomas Trojek
- P12-3 **Some considerations to quality control and method validation in EDXRF analysis**
R. Padilla Alvarez, D. Hernández Torres, A. Markowicz, D. Wregzynek, E. China Cano and S. Bamford

Session 13 : X-Rays Optics

- P13-1 **SECCOX, a novel X-ray characterization bench for crystals**
T. Caillaud, M. Manson, D. Desenne, B. Goze, A. Rivet and P. Derouineau
- P13-2 **Recent Developments of polycapillary X-ray optics and its applications in X-ray spectrometry**
Ning Gao, Igor Ponomarev and Yejun He

Session 14 : X-Rays Detectors

- P14-1 **X-ray detector design based on silicon thermistors for space astronomy missions of the new generation**
A. Aliane, C. Socquet, P. Agnese, C. Pigot, J.-L. Sauvageot and C. Louis
- P14-2 **Charge introduction in semiconductor detectors with pixelated structure**
Victor V. Samedov
- P14-3 **Electrically cooled SiLi detectors for application in X-ray equipment**
A. Sokolov, A. Pchelintsev, A. Loupilov and Z. Struve
- P14-4 **Development of magnetic calorimeters for X-ray metrology applications**
Matias Rodrigues, Martin Loidl, Elvire Leblanc and Andreas Fleischman
- P14-5 **Novel high speed, high resolution X-ray CCD camera**
Martin Horvath, Ondrej Petr, Ladislav Pina and Rene Hudec
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Massimiliano Galeazzi
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Stephane Terracol, Thomas Niedermayr, Dragos Hau, Shafinaz Ali, Jean-Pierre Briand and Stephan Friedrich

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- P15-1 **A model to investigate the potential application of synchrotron X-ray scatter imaging on BMD reduction**
J. C. Lima, R. Cély Barroso, D. Braz, L. F. Oliveira, C. R. Ferreira Castro and R. Tadeu Lopes
- P15-2 **Synchrotron micro-tomographic reconstruction of gunshot residues and 3-dimensional lead distributions**
Ivan Kempson, William Skinner and K Paul Kirkbride
- P15-3 **Scanning transmission X-ray microscopy with a fast-readout CCD detector**
Alessandra Gianoncelli, Graeme R Morrison and Burkhard Kaulich
- P15-4 **Three-dimensional characterization of U and Pu containing particles from Telkem, Kazakhstan**
O.-C. Lind, L. Claussen, B. Salbu, B. Vekemans, W. De Nolf, K. Janssens, M. Denecke, R. Simon, G. Falkenberg and E. Van De Castele
- P15-5 **DEPFET active pixel sensors and pnCCDs for room temperature imaging X-ray and electron spectroscopy**
Lothar Strüder and Heike Soltau
- P15-6 **Characterization of environmental radioactive microparticles by scanning electron microscopy (SEM) combined with energy-dispersive X-ray spectrometry (EDXRS)**
M.C. Jiménez-Ramos, I. Vioque, R. García-Tenorio and M. García-León

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Xiuchun Zhan, Liqiang Luo and Xingtao Fan
- P16-2 **Determination of sulfur content in oil with benchtop WDXRF**
Takashi Yamada, Mokoto Doi, Noboru Yamashita, Takashi Shoji and Hisayuki Kohno
- P16-3 **Determination of X-ray resonant Raman scattering cross sections of nickel employing both synchrotron radiation and proton induced X-rays**
Ch. Zarkadas, M. Mueller, A.G. Karydas, B. Beckhoff, M. Kolbe and R. Fliegau
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L. Perring and J. Blanc