

## Conference program

**The 13th conference on Total Reflection X-Ray Fluorescence Analysis and Related Methods  
15 – 19 June, 2009. Gothenburg, Sweden**

	Monday 15 <sup>th</sup>	Tuesday 16 <sup>th</sup>	Wednes -day 17 <sup>th</sup>	Thursday 18 <sup>th</sup>	Friday 19 <sup>th</sup>				
09.00	Registration		Excursion to Carlstens fortress and Nordic Watercolour museum. Start 08.00						
09.20									
09.40	Opening			I4	Meirer	I5	Kunimura		
10.00		O11		Garibaldi/ Geoffroy	O19	Kregsamer	O28	Pajek	
10.20	I1	Pepponi		O12	Yamada	O20	Gohshi	O29	Pessanha/ Carvahlo
10.40	O1	Kayser		O13	Tiwari	O21	Kurisaki/ Wakati	Coffee/Refreshment	
11.00	Coffee			O14	Egorov	Coffee		O30	Griesel
11.30	O2	Nutsch/ Pepponi		O15	Horntrich/ Streli	O22	Seneviratne	Closing remarks	
11.50	O3	Kolbe		O16	Simsek	O23	Marco Parra		
12.10	O4	Sasamoni/ Wobrauschek		O17	Tanigushi	O24	Stosnach		
12.30	Lunch			Lunch		Lunch			
13.40	I2	Perez		I3	von Bohlen	O25	Kallithrakes- Kontos		
14.00						O26	Misra		
14.20	O5	Tiwari		O18	Tsuji	O27	Wagner		
14.40	O6	Krämer		Poster session 1. Poster 1-18 Coffee		Poster session 2 Posters 19-34 Coffee			
15.00	O7	Kawai							
15.20	Coffee								
15.50	O8	Barros/ Marco Parra							
16.10	O9	Boeykens/ VÁzquez							
16.30	O10	Gatari Gichuru							
18.00	<b>Reception by Load Mayor Jörgen Linder</b>		<b>Lab visit + Bruker workshop</b>		<b>Tram pickup 18.00 to Conference dinner</b>				

In case of several names in the cells this is to be interpreted as:  
Name1/Name2 = First author/Presenter

Microelectronic / Industrial applications / related methods
Instrumental / Technical development
Biological / Medical / Environmental applications

Please see the detailed session program for session chair persons. If you are giving an oral presentation please see your chair person before the session starts to assure a smooth session.

The conference will be held in room **Lyktan** at the **Conference Center Wallenberg**, part of the University of Gothenburg. Medicinaregatan 20A, Gothenburg. Telephone: +46 31 786 5959. The foyer will be used for registration, industrial exhibition, coffee breaks and poster sessions. Lunch is served in the same building. The premises are accessible and safe for disabled people.

## Special issue of *Spectrochimica Acta Part B: Atomic Spectroscopy*

**Articles** based on your presentation or poster at the TXRF 2009 conference may be submitted for inclusion in a special issue of ***Spectrochimica Acta Part B: Atomic Spectroscopy***.

Please find below the instructions for on-line submission for your article for inclusion in the special issue devoted to the symposium, of the journal ***Spectrochimica Acta Part B: Atomic Spectroscopy***. All manuscripts will be subject to the usual refereeing procedure.

To enable us to deal with the manuscripts as fast and efficiently as possible, you are kindly invited to submit your manuscript via the journal's online submission and reviewing system which is accessible at: <http://ees.elsevier.com/sab>. Below please see instructions for submitting your manuscript:

### To submit:

- Go to: <http://ees.elsevier.com/sab>
- Click on the "Submit Paper" option from the top menu
- Enter your user name and password (first time users will have to register)
- After entering the titles of your manuscript, please select **TXRF 2009** as the 'Article Type'
- Select **N. Omenetto** as Editor
- Follow the remaining step-by-step instructions to submitting your paper

### Points to note:

- The deadline to submit your manuscript to the **TXRF 2009** symposium issue of ***Spectrochimica Acta Part B: Atomic Spectroscopy*** is **30 September 2009**
- When preparing your manuscript please follow the journal's Guide for Authors closely, which you can find on the online submission site (<http://ees.elsevier.com/sab>)
- In your cover letter, please mention that your manuscript is intended for **TXRF 2009** special issue

If you experience any technical problems or have any technical questions during the submission process, please contact Elsevier's Author Support: [authorsupport@elsevier.com](mailto:authorsupport@elsevier.com). If you have any questions on the submission and reviewing process, please contact the Editorial Office.

We sincerely hope that you will wish to have your manuscript included in the journal.

**Oral session 1**                      **Monday 15<sup>th</sup> 09.40 – 12.30**  
**Session chair:**                      **Kouichi Tsuji**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
I1	10.00	Giancarlo Pepponi	A review of Grazing Incidence X-Ray Fluorescence Analysis applied to the quantification of ion implants	11
O1	10.40	Yves Kayser	Depth profiles of Al impurities implanted in Si wafers determined by means of the high resolution GEXRF technique	12
O2	11.30	Giancarlo Pepponi	Comparison of TXRF Systems from Si wafer surface analysis at different laboratories of ANNA	14
O3	11.50	Michael Kolbe	Assessing monolayer depositions on semiconductor surfaces by reference-free X-ray spectrometry at grazing incidence conditions	15
O4	12.10	Peter Wobrauschek	Si wafer analysis of light elements by TXRF – chamber adaption to fit 6“ and 8“ wafers	16

**Oral session 2**                      **Monday 15<sup>th</sup> 13.40 – 15.20**  
**Session chair:**                      **Cristina Vázquez**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
I2	13.40	Carlos Alberto Perez	Grazing-incident and Grazing-exit Experiments at the D09B XRF Fluorescence Beamline of the LNL	17
O5	14.20	M K Tiwari	Grazing Incidence X-ray Fluorescence Characterization of Thin films and Surfaces using CATGIXRF program	18
O6	14.40	Markus Krämer	Tailormade nanometer reference samples for TXRF and XSW analysis of particle and layer-type structures	19
O7	15.00	Jun Kawai	Resonance Raman or radiative Auger satellite as the background of total reflection X-ray fluorescence	21

**Oral session 3**                      **Monday 15<sup>th</sup> 15.50 – 16.50**  
**Session chair:**                      **Annemarie Wagner**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
O8	15.50	Lué-Merú Marcó Parra	Determination of arsenic in water samples by TXRF using preconcentration with alumina	22
O9	16.10	Cristina Vázquez	The release of heavy metals from contaminated soils by leaching processes: a TXRF study	23
O10	16.30	Michael Gatari Gichuru	Application of TXRF in preliminary evaluation of trace elements in wetland waters in the city of Nairobi, Kenya	24

**Oral session 4**                      **Tuesday 16<sup>th</sup> 09.40 – 11.00**  
**Session chair:**                      **Christina Strelí**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
O11	09.40	Charles Geoffroy	Zero Edge Exclusion TXRF for IC manufacturing	27
O12	10.00	Takashi Yamada	Installation of Depth Analysis Function into Bench-Top TXRF Instrument	29
O13	10.20	M K Tiwari	Determination of Average Height of Metal Nanoparticles on a Si Surface using X-ray Standing wave	30
O14	10.40	Vladimir Egorov	High effective compact TXRF cell on base of the planar X-ray waveguide-resonator	31

**Oral session 5**                      **Tuesday 15<sup>th</sup> 11.30 – 12.30**  
**Session chair:**                      **Marie Luisa Carvalho**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
O15	11.30	Christina Strelí	Improvement of calibration processes in TXRF of wafer surface analysis: Investigation of saturation effects in TXRF by comparing picodroplets and microdroplets	32
O16	11.50	Atakan Simsek	Expanded Detector Efficiency of Silicon Drift Detectors for TXRF Applications	33
O17	12.10	Kazuo Tanigushi	To be announced	34

**Oral session 6                      Tuesday 16<sup>th</sup> 13.40 – 15.00**  
**Session chair:                      Michael Gatari Gichuru**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
I3	13.40	Axel von Bohlen	X-ray Standing Waves – a promising tool for near surface nano analysis	35
O18	14.20	Kouichi Tsuji	X-ray Energy Filtering by Using Total Reflection in Polycapillary X-ray Optics	36

**Oral session 7                      Thursday 18<sup>th</sup> 09.20 – 11.00**  
**Session chair:                      Nand Lai Misra**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
I4	09.20	Florian Meirer	Recent research about GI-XAS	37
O19	10.00	Peter Kregsamer	Accreditation (EN ISO 17025) for an Atomika 8030W wafer analyzer	39
O20	10.20	Yohichi Gohshi	The present status of ISOTC201 TXRF WG Si Wafer Analysis	40
O21	10.40	Hisanobu Wakati	Development of a new soft X-ray absorption spectrometric system and molecular orbital analysis for the measured spectra	41

**Oral session 8                      Thursday 18<sup>th</sup> 11.30 – 12.30**  
**Session chair:                      Peter Wobrauschek**

**Contributions:**

No.	Time	Presenter	Title	Abstract page
O22	11.30	Shirani Seneviratne	Human Blood and Tissue analysis by TXRF with a new vacuum chamber WOBISTRAX	42
O23	11.50	Lué-Merú Marcó Parra	Determination by TXRF of Total As in onion plants growing in contaminated substances	43
O24	12.10	Hagen Stosnach	Selenium analysis: Chance and challenge for TXRF spectroscopy	44

**Oral session 9                      Thursday 18<sup>th</sup> 13.40 – 14.40**  
**Session chair:                      Kazuo Tanigushi****Contributions:**

No.	Time	Presenter	Title	Abstract page
O25	13.40	Nikolaos Kallithrakas-Kontos	Selective Membrane Ion Separation and TXRF Analysis	45
O26	14.00	Nand Lai Misra	Determination of low Z elements at trace levels in uranium matrix using vacuum chamber-TXRF	47
O27	14.20	Annemarie Wagner	TXRF Analysis of Trace Elements in Size-Fractionated Particulate Matter Sampled on Polycarbonate Filters - Composition and Sources of Aerosol Particles in Göteborg, Sweden	48

**Oral session 10                      Friday 19<sup>th</sup> 09.20 – 11.50**  
**Session chair:                      Jun Kawai****Contributions:**

No.	Time	Presenter	Title	Abstract page
I5	09.20	Shinsuke Kunimura	Portable TXRF spectrometer for detecting picograms of elements	50
O28	10.00	Marek Pajek	Synchrotron radiation based grazing emission x-ray fluorescence	52
O29	10.20	Maria Luisa Carvalho	Quantitative determination of heavy metals in different stages of wine production by X- ray spectrometry: Comparison on two vineyards	53
O30	Approx 11.00	Simone Griesel	Trace elements in body fluids measured by total reflection X-ray fluorescence spectrometry (TXRF)	54

## Poster session 1      Tuesday 16<sup>th</sup> 14.40

### Contributions

No.	1 <sup>st</sup> author/ Presenter	Title	Abstract page
P1	Tohru Awane/ Kouichi Tsuji	Grazing Exit Micro XRF Analysis of Hazardous Contaminations on a Plant Leaf	55
P2	M J G Gatari	Determination of trace metals in bottled commercial drinking water using TXRF in Nairobi, Kenya	56
P3	Erla G Hafsteinsdottir	Orthophosphate fixation of metals at 295 K, 275 K and in the presence of freeze-thaw cycling	57
P4	Carlos J Perez	Effect of chronic intake of arsenic on the Na, P, S, Cl, K, Ca, Mn, Fe, Cu, Zn, As and Br distribution in rat organs	58
P5	Amarjeet Singh	Ionic redistribution during the growth of protein self-assembly at air-water interface	59
P6	Samuel Tejeda	Characterization by Total Reflection X-ray Fluorescence of human and animal bones from the Mayan zone of Calakmul, Mexico	60
P7	Annemarie Wagner	Trace elements in PM <sub>2.5</sub> in Gothenburg, Sweden	61
P8	Cristina Vázquez	Hydrophylic polymer – surfactants interaction: adsorption properties study using TXRF	63
P9	Yasukazu Nakaye	Recording X-ray spectra using a music digitizer in a laptop computer	64
P10	M K Tiwari	Multilayer Mirror as a Substrate for Total Reflection X-ray Fluorescence Spectrometry	66
P11	Ulrich Waldschlaeger	Improved detection of light and heavy elements by a combined Ag-L and Ag K $\beta$ -excitation	67
P12	A F Bello/ -	Improving Al detection in TXRF with Hf Filter	68
P13	Sangita Dhara/ Nand Lai Misra	EDXRF determination of cadmium in uranium matrix using Cd K $\alpha$ excitation	69
P14	Markus Krämer	Multilayer X-ray optics with high precision deposition	70
P15	A Kubala- Kukus/ Marek Pajek	Investigation of the lateral distribution of elements in the multielemental standard samples by using the synchrotron radiation based micro x-ray fluorescence	72
P16	Yuichiro Shimizu/ Takashi Yamada	Depth analysis with Bench-top TXRF Instrument	74
P17	Andreas Pahlke	New generation of Vacuum Type “Silicon Drift Detector SDD” with 80 mm <sup>2</sup> Active Area for TXRF-Applications	75
P18	Woelfl/Mages		

**Poster session 2      Thursday 18<sup>th</sup> 14.40****Contributions**

No.	1 <sup>st</sup> author/ Presenter	Title	Abstract page
P19	Thomas Behrends	Trace element analysis in human seminal fluid - interaction of selenium and zinc	76
P20	Johan Boman	Trace element concentrations in Lake Osmansagar, India	77
P21	Maria Luisa Carvalho	Statistical study on trace elements behaviour in cancerous and healthy tissues of colon, breast and stomach: TXRF applications	79
P22	Diana Guimarães/ Maria Luisa Carvalho	Study of lead concentrations in exposed and control Wistar rat urine and feces by TXRF, ETAAS and EDXRF analysis	80
P23	Trinidad Martinez	Trace metal determination in candies marketed in Mexico by Total X-ray Fluorescence Spectrometry	81
P24	Natalia Novikova	X-ray standing waves studies of trace metal contaminations in lipid/protein molecular films on liquid subphase	82
P25	János Osán/ Christina Strelí	Speciation of copper and zinc in size-fractionated aerosol samples using TXRF-XANES	83
P26	Annemarie Wagner	TXRF Analysis of Trace Elements in Size-Fractionated Particulate Matter Sampled on Polycarbonate Filters - Composition and Sources of Aerosol Particles in Göteborg, Sweden	84
P27	Cristina Vázquez	TXRF inorganic pigment characterization on the San Pedro Gonzalez Telmo sibyls	85
P28	Graciela Zarazúa	Total reflection X-ray fluorescence spectrometric determination of elements in water hyacinth from the Lerma River	86
P29	Florian Mierer	Retrofitting of an ATOMIKA 8010 TXRF Wafer-analyzer for GI-XRF Analysis	87
P30	Ramon Fernández-Ruiz	TXRF Application to the Study of Quartz Microspheres Functionalized with Zr Organometallic Compounds: A New Catalytic System	88
P31	D Ingerle/ Christina Strelí	Spectrometer for Grazing Incidence XRF: Characterization of As Implants and Hf Layer	89
P32	Héctor Jorge Sánchez	Study of Cooper Surface Oxidation by Grazing Angle X-Ray Excitation	90
P33	Héctor Jorge Sánchez	TXRF Analysis using Policapillaries	91
P34	Alexei Vorobiev	Surface structure of sterically stabilized ferrofluids: X-ray reflectivity and fluorescence study	92