

**Wednesday 25 February**

Welcome Function	
18:00-20:00	Registration and Cocktail Function <i>Lord Charles Hotel Conference Venue Foyer</i>

**Thursday 26 February**

Software Workshop		
08:00-09:00	Registration	
	<b>OPENING SESSION</b>	
09:00-09:10	Opening Remarks by Conference Chair: W Przybylowicz	
09:10-09:25	Welcome Address by Acting NRF CEO Dr B Damonse	
09:25-09:50	Opening Address by the Honourable Minister of Science and Technology South Africa Ms Naledi Pandor	
09:50-10:20	Tea/Coffee Break	
SESSION W1 Chair: G Grime		
10:20-11:10	I Orlić <i>VIBA: Simulation and Quantitative analysis of PIXE and RBS Spectra</i>	I-1
11:10-12:00	C Ryan <i>GeoPIXE: Improved Dynamic Analysis Method for Quantitative PIXE Element Imaging of Complex Materials</i>	I-2
12:00-12:50	C Jeynes <i>ENDF: The complementary use of PIXE and elastic backscattering (EBS) for powerful IBA</i>	I-3
12:50-13:05	<b>Group photo</b>	
13:05-14:00	Lunch and poster mounting	
SESSION W2 Chair: D Cohen		
14:00-14:50	C Heirwegh <i>GUPIX and GUMAP</i>	I-4
14:50-15:40	G Grime <i>OMDAQ: Recent developments in the OMDAQ nuclear microbeam data acquisition and processing package</i>	I-5
15:40-16:00	Tea/Coffee Break	
16:00-16:30	L Pichon <i>TrauPIXE: A toolbox dedicated to the visualization, data handling and quantification of PIXE maps for the AGLAE facility</i>	I-6
16:30-17:10	A Simon <i>IAEA-PIXE Advancement of Accelerator-based Analytical Techniques</i>	I-7
Discussion Moderator: M A Reis		
17:10-18:30	Software Discussion	
20:00-21:00	<b>ASDA meeting (Accelerators in Africa-meeting of African participants)</b>	

**Friday 27 February**

<b>SESSION 3</b> Chair: T Calligaro		
08:30-09:10	D Cohen <i>K L, and M shell datasets for PIXE spectrum fitting and analysis</i>	I-8
09:10-09:30	M Pajek <i>Multiple ionization effects in x-ray emission induced by ion impact</i>	O-1
09:30-09:50	C Jeynes <i>The effects of databases and spectral fitting on PIXE accuracy assessed using CRMs</i>	O-2
09:50-10:10	D Guseinov <i>In situ and ex situ PIXE structural investigation of c-Si and Ge:Si/Si epitaxial films: simulation and experiments</i>	O-3
10:10-10:30	A Guesmia <i>Energy loss measurements of heavy ions crossing thin Polyvinylchloride (PVC) foil</i>	O-4
10:30-10:50	Tea/Coffee Break	
<b>SESSION 4</b> Chair: C Ryan		
10:50-11:30	M A Reis <i>Fundamental issues and new possibilities for PIXE emerging from high resolution PIXE EDS data</i>	I-9
11:30-11:50	J Buchriegler <i>High-Speed PIXE: Large area irradiation effects</i>	O-5
11:50-12:10	S Fazinic <i>Development and applications of high resolution PIXE at ion microprobe</i>	O-6
12:10-12:30	E Obiajunwa <i>Ion beam analysis facility at the centre for energy research and development, Ile-Ife, Nigeria and its application in research</i>	O-7
12:30-14:00	Lunch	
<b>SESSION 5</b> Chair: S Fazinic		
14:00-14:40	M Kavčič <i>Chemical state analysis of low-Z elements by means of high-energy resolution PIXE spectroscopy</i>	I-10
14:40-15:00	M A Reis <i>Ion beam particle and energy dependence of Fe<sub>2</sub>O<sub>3</sub> yield</i>	O-8
15:00-15:20	Tea/Coffee Break	
<b>SESSION P6</b> Chair: C Jeynes		
15:20-19:00	<b>Posters A 25 posters - 3 minutes per poster</b>	
19:30-21:00	<b>Meeting of IAC and IHC</b>	
20:00-22:00	<b>Table Tennis Tournament</b>	

**Saturday 28 February**

<b>SESSION 7</b>		
<b>Chair: A Denker</b>		
08:30-09:10	P Barberet <i>Development and applications of STIM- and PIXE-Tomography: a review</i>	I-11
09:10-09:30	C Heirwegh <i>Refinement of major and minor element PIXE analysis of rocks and minerals</i>	O-9
09:30-09:50	A Zucchiatti <i>Building a fingerprints database for modern art materials: PIXE analysis of commercial drawing media</i>	O-10
09:50-10:30	P Pelicon <i>Micro-PIXE at tandem accelerator: current state-of-the-art at the Jožef Stefan Institute</i>	I-12
10:30-10:50	Tea/Coffee Break	
<b>SESSION 8</b>		
<b>Chair: A Zucchiatti</b>		
10:50-11:30	T Calligaro <i>PIXE analysis of historical paintings: is the gain worth the risk?</i>	I-13
11:30-11:50	Ž Šmit <i>Advanced metal analysis of historic artifacts</i>	O-11
11:50-12:10	Q Lemasson <i>Attempt to read a removed text on a 16th c. silver tablepiece using scanned PIXE combined with AGLAEMap and AXSIA</i>	O-12
12:10-12:30	M Andreoli <i>PIXE micro-mapping of pre-solar dust in Hypatia: further evidence of cometary origin</i>	O-13
12:30-14:00	Lunch	
14:00-14:30	Travel to iThemba LABS	
<b>SESSION 9</b>		
<b>Chair: C Pineda-Vargas</b>		
14:30-15:10	J Campbell <i>The Curiosity Rover Alpha Particle X-ray spectrometer: Mineralogy and Geochemistry challenge Physics</i>	I-14
15:10-15:30	Tea/Coffee Break	
15:30-16:00	J Campbell <i>X-ray Fundamental Parameters for PIXE</i>	I-15
16:00-18:00	iThemba LABS TOUR	
18:00-20:00	Spitbraai (Barbeque with Lamb on the Spit)	
18:00-20:00	<b>IAC meeting (iThemba LABS Boardroom)</b>	

**Sunday 1 March**

08:00-19:00	CAPE PENINSULA EXCURSION Buses depart Lord Charles Hotel
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**Monday 2 March**

<b>SESSION 10</b> <b>Chair: J Dias</b>		
08:30-09:10	K Vogel-Mikuš <i>PIXE and complementary techniques in studies of trace element biology in plants</i>	I-16
09:10-09:30	G Echevarria <i>Distribution and speciation of nickel in two hyperaccumulating plants from South Africa</i>	O-14
09:30-09:50	A Van der Ent <i>Micro-PIXE study of Phyllanthus balgooyi, nickel hyperaccumulating tree from Sabah (Malaysia)</i>	O-15
09:50-10:10	A Wandzilak <i>How cancer may change the distribution of elements in the tissue?</i>	O-16
10:10-10:30	E Inyang <i>A combined multivariate elemental burden of agrochemicals application on a typical tropical agricultural soil with PIXE technique</i>	O-17
10:30-10:50	Tea/Coffee Break	
<b>SESSION 11</b> <b>Chair: F Lucarelli</b>		
10:50-11:30	J Dias <i>Radioactivity in Brazil: from Myth to Facts</i>	I-17
11:30-11:50	P Molz <i>Effect of chromium intake in a rat model of prediabetes</i>	O-18
11:50-12:10	I Kovács <i>External milli-beam PIXE investigation of Roman metal archaeological objects from the Municipium Tifernum Mataurense area (S. Angelo in Vado, Italy)</i>	O-19
12:10-12:30	M Elayaperumal <i>3D nanostructured carbon (C) doped ZnO thin-films investigation by fingerprint PIXE and resonant RBS technique</i>	O-20
12:30-12:50	C Freemantle <i>PIXE Characterization of By-Products Resulting from the Zinc Recycling of Industrial Cemented Carbides</i>	O-21
12:50-14:00	Lunch	
<b>SESSION P12</b> <b>Chair: P Pelicon</b>		
14:00-17:00	<b>Posters B</b> <b>24 posters - 3 minutes per poster</b>	
18:00-23:00	<b>Banquet at Nooitgedacht Estate: Sponsored by HVEE</b>	

**Tuesday 3 March**

<b>SESSION 13</b>		
<b>Chair: Ž Šmit</b>		
09:00-09:40	W Maenhaut <i>Present role of PIXE in atmospheric aerosol research</i>	I-18
09:40-10:00	F Lucarelli <i>The role of PIXE in the AIRUSE project "Testing and Development of air quality mitigation measures in Southern Europe"</i>	O-22
10:00-10:20	G Calzolari <i>Improvements in PIXE analysis of hourly particulate matter samples</i>	O-23
10:20-10:40	J Boman <i>Source characterization by analysis of PM<sub>2.5</sub> at an industrial site in Kingston, Jamaica</i>	O-24
10:40-11:00	Tea/Coffee Break	
<b>SESSION 14</b>		
<b>Chair: W Maenhaut</b>		
11:00-11:20	F Lucarelli <i>On the autarchic use of solely PIXE data in particulate matter source apportionment studies by receptor modelling</i>	O-25
11:20-11:40	J Boman <i>Size Segregated Particulate Matter Measurement in Nairobi, Kenya</i>	O-26
11:40-12:00	I Orlić <i>Long term fine aerosol analysis by XRF and PIXE techniques in the city of Rijeka, Croatia</i>	O-27
12:00-12:20	D Chilukusha <i>Microprobe PIXE Study of Ni-Ge Interactions in Lateral Diffusion Couples</i>	O-28
12:20-12:40	N Hanief <i>Solid-state dewetting of continuous thin platinum coatings</i>	O-29
12:40-13:00	SUMMARY	
13:00-13:20	CLOSURE	
13:20-14:30	Lunch	
	Departure	

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SESSION P6		
<u>Ana Paula L Bertol</u> , Ruth Hinrichs, Marcos Vasconcellos	Proton induced L- and M-subshells X-ray production cross sections of Au and Hf	<b>P-1</b>
<u>Marcos Vasconcellos</u> , Ana Paula Bertol, Ruth Hinrichs	Comparison of ionization cross sections of Al and Ni induced with alpha-particles and protons	<b>P-2</b>
<u>Vincent Metivier</u> , Charbel Koumeir, Arnaud Guertin, Ferid Haddad, Nathalie Michel, Diana Ragheb, Ahmed Rahmani, Noël Servagent, Alexandre Subercaze	Combined PIXE/PIGE with the high-energy beams of the ARRONAX cyclotron	<b>P-3</b>
Liana Appel Bouffleur Niekraszewicz, Claudia Telles de Souza, Elis Moura Stori, Livio Amaral, <u>Johnny Ferraz Dias</u>	The role of micro-NRA and micro-PIXE in carbon mapping of organic tissues	<b>P-4</b>
<u>Flávia Ferreira Fernandes</u> , Ana Paula Bertol, Marcos Vasconcellos, J F Dias	Evaluation of uncertainties in the proton induced X-ray production cross section of the elements Al, Si, Ti and Ni	<b>P-5</b>
Cristina P Chaves, <u>Miguel A Reis</u>	Study of K and L RYIED in closed and open shell rare earth elements	<b>P-6</b>
Cristina P Chaves, <u>Miguel A Reis</u>	Using the DT2 code to study UO <sub>2</sub> heavy ions PIXE data	<b>P-7</b>
<u>Mandla Msimanga</u> , Carlos Pineda-Vargas, Morgan Madhuku, Wojciech Przybylowicz	Experimental determination of L x-ray production cross sections from transition metals by 0.5 - 1.0 MeV/u C-12 ions	<b>P-8</b>
<u>Frans Munnik</u>	A simple method for deadtime corrections in microbeam measurements	<b>P-9</b>
<u>Artur Braun</u> , Dorota Flak, Bongjin Simon Mun, Max Döbeli, Mieczyslaw Rekas	Electronic structure and surface properties of nonstoichiometric iron oxide nanoparticles and its application in gas sensing	<b>P-10</b>
<u>Christopher Heirwegh</u> , Irina Pradler, John L Campbell	Comparison of x-ray mass attenuation coefficients used in PIXE analysis of silicate minerals and glasses	<b>P-11</b>
<u>Artur Braun</u> , Debajeet K Bora, Max Döbeli, Edwin C Constable	Hematite–NiO/ $\alpha$ -Ni(OH) <sub>2</sub> heterostructure photoanode with high electrocatalytic current density and charge storage capacity	<b>P-12</b>
<u>Johan Mars</u> , Khaled Ali, Dherendra Gihwala	The effect of Zr deposited on Ti-alloy archwires to be used as orthodontic material	<b>P-13</b>

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<u>Johan Mars</u> , Muftah Abdelaaziz, Dherendra Gihwala	Application of PIXE, SEM and BS in the formation kinetics of TiO <sub>2</sub> -monocomposites, used in posterior occlusional restoration	<b>P-14</b>
<u>Johan Mars</u> , Dherendra Gihwala	Application of PIXE, PIGE and BS to dendrite formation in steel	<b>P-15</b>
<u>Ruth Hinrichs</u> , Ana Paula L Bertol, Marcos A Z Vasconcellos	Analysis of trace elements in opals using PIXE	<b>P-16</b>
<u>Rafaela Debastiani</u> , Rolf Simon, Stefan Heißler, Andrea Wähning, Tilo Baumbach	Characterization of Roman mural paintings from Germany	<b>P-17</b>
Anaí Duarte, Luiza Manfredi da Silva, Cláudia Telles de Souza, Elis Moura Stori Rosa, <u>Johnny Ferraz Dias</u>	Elemental characterization of gunshot residues generated by Brazilian manufactured ammunition	<b>P-18</b>
<u>Mohamad Roumie</u> , Urszula Wicenciak, Mohamaed El-Bast, Bilal Nsouli	Identification of pottery production from the necropolis of Jiyeh archaeological site by PIXE	<b>P-19</b>
<u>Mohamad Roumie</u> , Sandrine Elaigne, Mona Bahja, Mohamed El-Bast, Pierre Louis Gatier	Characterization of the pottery production of Tyre historical site using PIXE technique and cluster analysis	<b>P-20</b>
<u>Aram Khachatryan</u> , Oleksandr Buhay, Volodymyr Yu Storizhko, Oleg Tubolzev	PIXE analysis for characterization of flint archaeological artefacts	<b>P-21</b>
<u>Alessandro Zucchiatti</u> , David Jiménez-Rey, Aurelio Climent-Font, Marco Maggi, Lorenzo Giuntini, Silvia Calusi, Silvia Martina	PIXE and IL analysis of an archeologically problematic XIII century ceramic production	<b>P-22</b>
<u>Samson Oluwagbemiga Alayande</u> , O D Oluwagbemiga, K T Ogundele, W D Makinde, Gabriel Osinkolu, Tam Msagati	PIXE Technique: a valuable tool for differentiating food varieties	<b>P-23</b>
Amel Dib, Hakim Ammi, <u>Abdelkader Guesmia</u> , Mandla Msimanga, Ster Mammeri, Carlos Pineda-Vargas	Optimization of different experimental parameters used in external beam set up	<b>P-24</b>
Emmanuel Ajenifuja, <u>Gabriel Osinkolu</u> , Yisau Fasasi, David Pelemo, Eusebius Obiajunwa	Rutherford Backscattering Spectroscopy and structural analyses of DC reactive magnetron sputtered titanium nitride thin films on glass substrate	<b>P-25</b>

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SESSION P12		
<u>Manikandan Elayaperumal</u> , John Kennedy, Ninaya Kumar Panigrahi	Overview of PIXE fingerprint technique for coastal samples east coast of Tamil Nadu, India	<b>P-26</b>
<u>Thualaganyo Phillip Sechogela</u> , Langutani Mathevula, Lebogang Kotsedi, Nkosi Mlungisi, Thomas Malwela, Graham Hardie, Remy Bucher, Basil Julies, Reginald Madjoe, Malik Maaza	Physical properties of multilayer ZnO/VO <sub>2</sub> /ZnO thin films grown by Pulsed Laser Deposition	<b>P-27</b>
Meriam El Ouahabi, <u>Grégoire Chêne</u> , Arnaud Beckers, Anne-lise Develle, Jacqueline Vander Auwera, Stefan Opitz, David Strivay, Aurelia Hubert-Ferrari	PIXE-PIGE, XRF, and Avaatech XRF Core Scanner of lake sediments: an inter-laboratory comparison	<b>P-28</b>
<u>Zsofia Kertesz</u> , Ágnes Takács	Micro-PIXE study of Au-Ag-Cu ore from the Recsk Ore Complex in North-Hungary	<b>P-29</b>
<u>Arvind Agarwal</u>	X-ray Absorption Spectra of Tl-Ba-Ca-Cu-O system of superconductors and local structure of thallium ion	<b>P-30</b>
<u>Zakhelumuzi Khumalo</u> , Mira Topic, Mark Blumenthal	The study of platinum-silicon droplets used to catalyse the silicon nano-wires growth	<b>P-31</b>
Sebastian Fuchs, <u>Wojciech Przybylowicz</u>	Uncovering hydrothermal processes in Au-U-ore deposits using micro-PIXE	<b>P-32</b>
<u>Jan-Olof Lill</u> , Yvette Heimbrand, Joakim M K Slotte, Mikael Himberg, Ann-Britt Florin, Henry Hägerstrand	PIXE analyses of polished otoliths for identification of anadromous whitefish in the northern Baltic Sea	<b>P-33</b>
<u>Katarina Vogel-Mikuš</u> , Eva Kovačec, Primož Vavpetič, Mitja Kelemen, Primož Pelicon, Marijan Nečemer, Peter Kump, Marjana Regvar	CuO nanoparticles affect distribution of mineral nutrients in sunflower	<b>P-34</b>
<u>Karen Cloete</u> , <u>Wojciech Przybylowicz</u> , Jolanta Mesjasz-Przybylowicz, Alban Barnabas, Alexander Valentine, Alfred Botha	Micro-PIXE mapping of elemental distribution in roots of a Mediterranean-type sclerophyll, <i>Agathosma betulina</i> (Berg.) Pillans, colonized by <i>Cryptococcus laurentii</i>	<b>P-35</b>
<u>Wojciech Przybylowicz</u> , Marnel Mouton, Alfred Botha, Meredith Thornton, Jolanta Mesjasz-Przybylowicz	Elemental distribution patterns in the skins of false killer whales ( <i>Pseudorca crassidens</i> ) from a mass stranding in South Africa, analyzed using micro-PIXE	<b>P-36</b>
<u>Wojciech Przybylowicz</u> , Pengjie Hu, Yaodong Wang, Longhua Wu, Zhu Li, Alban Barnabas, Yongming Luo, Jolanta Mesjasz-Przybylowicz	Cryo-micro-PIXE study of the zinc/cadmium hyperaccumulator <i>Sedum plumbizincicola</i> grown naturally	<b>P-37</b>

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<u>Simon Olabanji</u> , David Pelemo, Eusebius Obiajunwa, Gabriel Osinkolu, Adekunle Oladele	PIGE analysis of <i>Thaumatococcus danielli</i> in Osun state of Nigeria	<b>P-38</b>
<u>Simon Olabanji</u> , Gabriel Osinkolu, David Pelemo, Eusebius Obiajunwa, Adekunle Oladele	PIXE analysis of <i>Thaumatococcus danielli</i> in Osun state of Nigeria (Part II)	<b>P-39</b>
<u>Roya Ndimba</u> , Luke Mehlo, Christopher Mtshali, Jens Kossmann, Carlos Pineda-Vargas	Detecting changes in the elemental composition and nutritional value of transgenic sorghum grain	<b>P-40</b>
Elzbieta Orlowska, <u>Nametso Mongwaketsi</u> , Wojciech Przybylowicz, Jolanta Mesjasz- Przybylowicz	Micro-PIXE study of arbuscular mycorrhiza influence on elemental uptake by nickel hyper accumulating plant <i>Berkheya coddii</i>	<b>P-41</b>
<u>Christopher Mtshali</u> , Roya Minnis-Ndimba, Carlos Pineda-Vargas	Elemental analysis of sorghum seeds and leaves treated with hydrophilic fullerene using PIXE technique	<b>P-42</b>
<u>Pulane Koosaletse Mswela</u> , Wojciech J Przybylowicz, Karen Cloete, Alban D Barnabas, Nelson Torto, Jolanta Mesjasz-Przybylowicz	Quantitative mapping of elemental distribution in leaves of the metallophytes, <i>Helichrysum candolleianum</i> , <i>Blepharis aspera</i> , and <i>Blepharis diversispina</i> from Selkirk Cu-Ni mine, Botswana	<b>P-43</b>
<u>Jose Guambe</u> , Johan Mars, Jenny Day	Application of IBA in the forensic profiling of environmental pollution of natural resources	<b>P-44</b>
<u>Christian Kwasi Nuviadenu</u> , Massimo Chiari, Claudio Tuniz, Samuel Akoto-Bamford, Silvia Nava, Benjamin Nyarko	Aerosols characterisation and pollution source apportionment in Abuesi airshed	<b>P-45</b>
<u>Kamela Sekonya</u> , Stuart Piketh, Elias Sideras-Haddad, Carlos Pineda-Vargas	Characterisation of atmospheric aerosols using PIXE analysis in Khayelitsha township, South Africa	<b>P-46</b>
<u>Enikő Furu</u> , Ilona Katona-Szabo, Anikó Angyal, Zoltán Szoboszlai, Zsófia Török, Zsófia Kertész	The effect of the tramway track construction on the aerosol pollution in Debrecen, Hungary	<b>P-47</b>
<u>Franco Lucarelli</u> , Valter Barrera, Massimo Chiari, Martina Giannoni, Silvia Nava, Mirko Severi, Rita Traversi, Daniele Frosini	Study of air pollution in the proximity of a waste incinerator plant	<b>P-48</b>
<u>Mohamad Roumie</u> , Ahmad Reslan, Ali Srour, Mohamed El-Bast, Bilal Nsouli	Assessment of fine and coarse ambient aerosol particles from a suburb area of Beirut using PIXE technique	<b>P-49</b>