

PROGRAMME OF THE 9th WORLD CONFERENCE ON NEUTRON RADIOGRAPHY (WCNR-9)

3 – 8 Oct 2010

Kwa-Maritane Bush Lodge, Pilansberg Nature Reserve
North-West Province, South Africa

DAY- 1: Sunday 3 October 2010

10:00 – 18:00	Registration Desk open
15:00 – 18:00	Board Meeting of ISNR
18:00 – 22:00	Welcome Cocktail function Dress: Informal – Bring swimming gear) Venue: On grass next to the 2 nd swimming pool at the west side of the conference venue

DAY- 2: Monday 4 October 2010

8:30	Opening ceremony	
SESSION-1 9:40 – 11:00	APPLICATIONS-1 Session Chair: Frikkie de Beer & Sangjin Lee	
09:40 – 10:20	Barton : Honorable Member of ISNR : Key note speaker NUCLEAR DISARMAMENT POTENTIAL OF NEUTRON RADIOGRAPHY SYSTEMS DATABASE	
10:20 – 10:40	Lehmann	HOW TO ORGANIZE A USER LAB FOR NEUTRON IMAGING – 13 YEARS OF EXPERIENCES AT PSI, SWITZERLAND
10:40 – 11:00	Kardjilov	AGING OF MAGNETIC STRUCTURES WITH POLARISED NEUTRONS
11:00 – 11:40	REFRESHMENT BREAK POSTER SESSION-1	
SESSION-2 11:40 – 12:40	APPLICATIONS-2 Session Chair: Burkhard Schillinger & Tetsuya Kai	
11:40 – 12:00	Sim	EUTRON IMAGE IDENTIFICATION OF DINOSAUR EMBRYO in ovo
12:00 – 12:20	Du Plessis	COMPUTERIZED TOMOGRAPHIC EXAMINATION OF NON-MAMMALIAN CYNODONT CRANIAL ENDOCASTS
12:20 – 12:40	Kaertsner	MUHREC – A CT-RECONSTRUCTOR FOR NEUTRON IMAGING
12:40 – 13:40	LUNCH	
SESSION-3	METHODS-1	

13:40 – 15:30	Session Chair: Nobuyuki Takenaka & Volker Dangendorf	
13:40 – 14:10	Vlassenbroeck : Key note speaker OCTOPUS RECONSTRUCTION SOFTWARE	
14:10 – 14:30	Strobl	TIME-OF-FLIGHT IMAGING AT CONTINUOUS NEUTRON SOURCES
14:30 – 14:50	Zawisky	THE INFLUENCE OF BORON MICRO-INHOMOGENEITIES ON NEUTRON TRANSMISSION
14:50 – 15:10	Josic	ENERGY SELECTIVE NEUTRON IMAGING
15:10 – 15:30	Mochiki	A DYNAMIC NEUTRON CT SYSTEM USING A NEUTRON IMAGE INTENSIFIER
15:30 – 16:00	REFRESHMENT BREAK POSTER SESSION-1	
SESSION-4	BEAMS-1	
16:00 – 18:00	Session Chair: Les Bennet & Yasushi Saito	
16:00 – 16:20	Bücherl	REAL-TIME RADIOGRAPHY AT THE NECTAR FACILITY
16:20 – 16:40	Garbe	THE NEW NEUTRON RADIOGRAPHY / TOMOGRAPHY / IMAGING STATION DINGO AT OPAL
16:40 – 17:00	Kiyanagi	DESIGN STUDY OF THE IMAGING BEAM LINE AT J-PARC MLF, ERNIS
17:00 – 17:20	Hussy	CHANGES IN THE OPTICAL AXIS DUE TO REACTOR OPERATION
17:20 – 17:40	Bilheux	NEUTRON IMAGING AT ORNL: ONGOING EFFORT AND FUTURE PROSPECT
17:40 – 18:00	De Beer	VISUALISING AND QUANTIFICATION OF OIL IN SANDSTONE: A NEUTRON IMAGING STUDY
EVENING PROGRAM	DEPENDS ON WEATHER 1) SOUTHERN SKIES AND TELESCOPE 2) CONFERENCE BUSH BRAAI	

DAY- 3: Tuesday 5 October 2010

SESSION-5	APPLICATIONS-3	
8:20 – 11:00	Session Chair: Anton Tremsin & Zhiyu Guo	
08:20 – 08:40	Sato	PULSED NEUTRON SPECTROSCOPIC IMAGING FOR CRYSTALLOGRAPHIC TEXTURE AND MICROSTRUCTURE
08:40 – 09:00	Schulz	QUANTUM CRITICALITY: RADIOGRAPHY WITH POLARISED NEUTRONS
09:00 – 09:20	Takenaka	VISUALIZATION OF DYNAMIC 3-D BEHAVIOUR OF WATER IN POLYMER ELECTROLYTE FUEL CELL BY USING NEUTRON IMAGE INTENSIFIER
09:20 – 09:40	Murakawa	MEASUREMENTS OF WATER THICKNESS IN PEM FUEL CELLS AND ANALYSIS OF GAS VELOCITY DISTRIBUTIONS
09:40 – 10:00	Yasuda	EVALUATION OF WATER DISTRIBUTION IN A SMALL SIZED FUEL CELL UNDER OPERATION USING NEUTRON COLOR IMAGE INTENSIFIER
10:00 – 10:20	Schillinger	NEUTRON COMPUTED TOMOGRAPHY OF PLASMA

		FACING COMPONENTS FOR FUSION EXPERIMENTS
10:20 – 11:00	REFRESHMENT BREAK POSTER SESSION-2	
SESSION-6 11:00 – 12:40	DETECTORS-1 Session Chair: Chris Franklyn & Markus Strobl	
11:00 – 11:20	Kardjilov	HIGH RESOLUTION NEUTRON IMAGING USING CCD BASED DETECTORS
11:20 – 11:40	Tremsin	HIGH RESOLUTION NEUTRON IMAGING AND TRANSMISSION DIFFRACTION WITH NOISELESS READOUT
11:40 – 12:00	Taniguchi	FIXED PATTERN NOISE IN COOLED CCD IMAGES INDUCED BY NEUTRON IRRADIATION
12:00 – 12:20	John	IMPLEMENTATION CHALLENGES OF HIGH SPEED DATA TRANSFER AND REAL TIME IMAGE PROCESSING ON FNR IMAGES FOR MOVING AND STATIC TARGETS
12:20 – 12:40	Bartle	NOVEL METHODS FOR MEASURING AFTERGLOW IN DEVELOPMENTAL SCINTILLATORS
12:40 – 13:40	LUNCH	
SESSION-7 13:40 – 15:30	METHODS-2 Session Chair: Wolfgang Treimer & Hideki Murakawa	
13:40 – 14:10	Lehmann : Key note speaker IMAGING WITH COLD NEUTRONS	
14:10 – 14:30	Guo	CODED SOURCE PHASE CONTRAST NEUTRON IMAGING
14:30 – 14:50	Huang	THE FEASIBILITY OF CODED-APERTURES-BASED NEUTRON IMAGING AT THE CPHS
14:50 – 15:10	Pugliesi	COMPARISON OF DIGITAL IMAGING SYSTEMS FOR NEUTRON RADIOGRAPHY
15:10 – 15:30	Strobl	VISUALIZING MICROSTRUCTURES AND MAGNETIC DOMAIN STRUCTURES BY DARK-FIELD NEUTRON IMAGING
15:30 – 16:00	REFRESHMENT BREAK POSTER SESSION-1	
SESSION-8 16:00 – 17:20	APPLICATIONS-4 Session Chair: Koh-Ichi Mochiki & Daniel Hussey	
16:00 – 16:20	Bennet	NEUTRON TOMOGRAPHY INSPECTION OF COMPOSITE HONEYCOMB ADHESIVE BONDS
16:20 – 16:40	Kharfi	TEMPORAL AND SPATIAL RESOLUTION LIMITS STUDY OF A CCD NEUTRON IMAGING CAMERA BASED ON MTF AND VIDEO SEQUENCES ANALYSIS
16:40 – 17:00	Grosse	IN-SITU NEUTRON RADIOGRAPHY INVESTIGATIONS OF THE HYDROGEN DIFFUSION AND ABSORPTION IN ZIRCONIUM ALLOYS
17:00 – 17:20	Andersson	NEUTRON TOMOGRAPHY FOR VOID DISTRIBUTION MEASUREMENTS
EVENING PROGRAM	DEPENDS ON WEATHER 1) SOUTHERN SKIES AND TELESCOPE 2) CONFERENCE BUSH BRAAI	

DAY- 4: Wednesday 6 October 2010

SESSION-9 8:30 – 10:20	BEAMS-2 Session Chair: Cheul Muu Sim & Anders Kaertsner	
08:30 – 09:00	Schillinger : Key note speaker RADIOGRAPHY AND PARTIAL TOMOGRAPHY OF WOOD WITH THERMAL NEUTRONS	
09:00 – 09:20	Burca	A NEW BRIDGE TECHNIQUE FOR NEUTRON TOMOGRAPHY AND DIFFRACTION MEASUREMENTS
09:20 – 09:40	Shinohara	QUANTITATIVE MAGNETIC FIELD IMAGING BY POLARIZED PULSED NEUTRONS AT J-PARC
09:40 – 10:00	Smith	THE EXAMINATION, ANALYSIS AND CONSERVATION OF AN EGYPTIAN BRONZE HORUS STATUETTE
10:00 – 10:20	Beyer	IN-SITU OBSERVATION OF HYDROGEN EFFUSION IN AUSTENITIC STAINLESS STEEL USING NEUTRON RADIOGRAPHY
10:20 – 11:00	REFRESHMENT BREAK POSTER SESSION-3	
SESSION-10 11:00 – 12:40	METHODS-3 Session Chair: Ray Tsukimura & Linda Josic	
11:00 – 11:20	Treimer	ON COHERENCE IN NEUTRON RADIOGRAPHY AND TOMOGRAPHY
11:20 – 11:40	Kai	FIRST DEMONSTRATION OF NEUTRON RESONANCE ABSORPTION IMAGING USING A HIGH-SPEED VIDEO CAMERA IN J-PARC
11:40 – 12:00	Kaetsner	NEUTRON GRATING INTERFEROMETRY INSTRUMENTATION
12:00 – 12:20	Helfen	NEUTRON LAMINOGRAPHY – A NOVEL APPROACH TO THREE-DIMENSIONAL IMAGING OF FLAT OBJECTS WITH NEUTRONS
12:20 – 12:40	ISNR BOARD : VOTING AND FUTURE CONFERENCES	
12:40 – 13:40	LUNCH	
SESSION-11 13:40 – 15:30	DETECTORS-2 Session Chair: Nikolay Kardjilov & Reynaldo Pugliesi	
13:40 – 14:10	Kobayashi : Honorable Member of ISNR : Key Note speaker A HISTORY OF NEUTRON RADIOGRAPHY RESEARCHES	
14:10 – 14:30	Lee	ADVANCED NEUTRON RADIOGRAPHY AND TOMOGRAPHY USING FILTER AND PHASE DIFFERENCE BASED TECHNIQUES
14:30 – 14:50	Dangendorf	STREOBOSCOPIC IMAGING WITH A MULTI-FRAME INTENSIFIER NEUTRON CAMERA
14:50 – 15:10	Calzada	REUSABLE SHIELDING MATERIAL FOR NEUTRON- AND GAMMA-RADIATION
15:10 – 15:30	Bennet	DEVELOPMENT OF A NEUTRON TOMOGRAPHY SYSTEM USING A LOW FLUX REACTOR
15:30 – 16:00	REFRESHMENT BREAK POSTER SESSION-3	
SESSION-12 16:00 – 17:40	APPLICATIONS-5 Session Chair: Thomas Bucherl & Peter Andersson	
16:00 – 16:20	Schillinger	MACROSCOPIC DARK FIELD IMAGING USING

		SCATTER GRIDS
16:20 – 16:40	Radebe	VALUATION OF QUANTITATIVE NEUTRON IMAGING SOFTWARE (QNI) CORRECTIONS IN POROUS MEDIA APPLICATIONS
16:40 – 17:00	Trtik	NEUTRON TOMOGRAPHY OF WATER RELEASE FROM LIGHTWEIGHT AGGREGATES IN CEMENT PASTES
17:00 – 17:20	Brew	APPLICATION OF NEUTRON AND X-RAY IMAGING TO CEMENTITIOUS BARRIERS AND CERAMIC WASTEFORMS
17:20 – 17:40	Kardjilov	RAGG EDGE IMAGING UNDER IN-SITU MECHANICAL LOADING AT A REACTOR SOURCE AND COMPARSION TO DIFFRACTION BASED RESULTS
EVENING PROGRAM	EVENING AT LEISURE	

DAY- 5: Thursday 7 October 2010

SESSION-13 8:30 – 10:20	FACILITIES-1 Session Chair: Mohammed Arif & Micro Grosse	
08:30 – 09:00	Handle : Key note speaker	
	VOLUME GRAPHICS STUDIO(MAX) VISUALIZING SOFTWARE	
09:00 – 09:20	Nshimirimana	HE ROLE OF SANRAD FACILITY IN QUANTITATIVE AND MORPHOLOGICAL INVESTIGATION
09:20 – 09:40	Guo	PKUNIFTY: A NEUTRON IMAGING FACILITY BASED ON RFQ ACCELERATOR
09:40 – 10:00	Jafari	NEUTRON RADIOGRAPHY SYSTEM DESIGN BY USING MONTE CARLO CODE MCNPX
10:00 – 10:20	Denker	THE GENESIS OF JAN STEENS PAINTING AS THE OLD ONES SING, SO THE YOUNG ONES PIPE FROM THE GEMÄLDEGALERIE BERLIN
10:20 – 11:00	REFRESHMENT BREAK	
SESSION-14 11:00 – 12:40	FACILITIES-2 Session Chair: Eberhard Lehmann	
11:00 – 11:20	Franklyn	FAST NEUTRON RADIOGRAPHY AT NECSA
11:20 – 11:40	De Beer	DEVELOPMENT OF THE NEW NEUTRON IMAGING FACILITY (SANRAD) FOR SOUTH AFRICA
11:40 – 12:00	PANEL DISCUSSION	
12:00 – 12:20	NEW ISNR-BOARD ANNOUNCEMENT INVITATION TO ITMNR-7 & WCNR-10	
12:40 – 13:40	LUNCH	
13:40	INTERST GROUP MEETINGS 1) ARCHAEOLOGY (IAEA program) 2) POROUS MEDIA 3) FAST NEUTRONS 4) COLD NEUTRONS	

EVENING PROGRAM	19:30 : GALA DINNER Dress: Semi Formal – no tie
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DAY- 6: Friday 8 October 2010

08:00	Buses Depart to Necsa
10:00 – 12:00	<p>Technical tour: Necsa: (Only delegated who sent a copy of Passport / SA ID to the conference secretariat will be allowed)</p> <p>Technical tour to:</p> <ul style="list-style-type: none"> - SAFARI-1 Nuclear research Reactor & Neutron Radiography facility - PLABS: Fast Neutron Generator <p>Buses depart to:</p> <ul style="list-style-type: none"> - Johannesburg International - LESEDI cultural village - Other destinations
12:00 – 15:00	<p>Tour: Lesedi Cultural Village (Delegates who paid)</p> <p>LUNCH: Lesedi Cultural village (Necsa Sponsor)</p> <p>Buses depart to various destinations</p> <ul style="list-style-type: none"> - Johannesburg International - Kwa-Maritane - Pretoria - Johannesburg

MONDAY 4th October	
POSTER SESSION - 1	
P1-1	Schillinger <i>DEHYDRATION OF MOULD SAND IN SIMULATED CASTING PROCESS EXAMINED WITH NEUTRON RADIOGRAPHY</i>
P1-2	Schillinger <i>MOISTURE IN AIRCRAFT INSULATION DETECTED BY NEUTRON RADIOGRAPHY</i>
P1-3	Pereira <i>NEUTRON TOMOGRAPHY ACTIVITIES AT THE PORTUGUESE NUCLEAR REACTOR</i>
P1-4	Guo <i>STUDY ON BEAM GEOMETRY AND IMAGE RECONSTRUCTION ALGORITHM IN FAST NEUTRON COMPUTERIZED TOMOGRAPHY AT NECTAR FACILITY</i>
P1-5	Trtik <i>PATCH MICROSTRUCTURE OF CEMENT PASTES – AN INSIGHT BY THE COMBINATION OF NEUTRON AND X-RAY TOMOGRAPHIES</i>
P1-6	Zhang <i>MONTE CARLO SIMULATIONS ON NEUTRON GRATING-BASED PHASE CONTRAST IMAGING AT CPHS</i>
P1-7	Jacobson <i>TOMOGRAPHY IMAGING OF SOUTH AFRICAN ARCHAEOLOGICAL AND HERITAGE STONE AND POTTERY OBJECTS</i>
P1-8	Kamiyama <i>ACCELERATOR-BASED NEUTRON TOMOGRAPHY COOPERATING WITH X-RAY RADIOGRAPHY</i>
P1-9	Ikura <i>EVALUATION OF THE NEW LIF-SCINTILLATOR AND THE OPTIONAL FILMS FOR SUPERIOR BRIGHTNESS</i>
P1-10	Yasuda <i>LIF CRYSTALS AS HIGH SPATIAL RESOLUTION NEUTRON IMAGING DETECTOR</i>
P1-11	Barton <i>TESTS OF HYPOTHESIS THAT A NEUTRON RADIOGRAPHY SYSTEM DATABASE MIGHT HELP DISARMAMENT NEGOTIATORS</i>

TUESDAY 5th October	
POSTER SESSION - 2	
P2-1	Guo <i>CODED SOURCE IMAGING SIMULATION WITH VISIBLE LIGHT</i>
P2-2	Guo <i>NEUTRONIC DESIGN AND WAVELENGTH SELECTION OF THE PEKING UNIVERSITY NEUTRON IMAGING FACILITY (PKUNIFTY)</i>
P2-3	Ouardi <i>GEANT4 USED FOR NEUTRON BEAM DESIGN OF A NEUTRON IMAGING FACILITY AT TRIGA REACTOR IN MOROCCO</i>
P2-4	Grosse <i>WAVELENGTH DEPENDENT NEUTRON TRANSMISSION AND RADIOGRAPHY INVESTIGATIONS OF THE HIGH TEMPERATURE BEHAVIOUR OF MATERIALS APPLIED IN NUCLEAR FUEL AND CONTROL ROD CLADDINGS</i>
P2-5	Huang <i>SCHEME FOR RADIOGRAPHY & TOMOGRAPHY WITH A LOW-BRILLIANCE NEUTRON SOURCE AT THE CPHS</i>
P2-6	ZHU <i>THE DEVELOPMENT OF THE THERMAL NEUTRON COMPUTERIZED TOMOGRAPHY EQUIPMENT AND THE CONTROL SYSTEM</i>
P2-7	Kharfi <i>CRITERIONS FOR BEST DYNAMIC IMAGING CAPABILITY WITH NEUTRON CAMERA ACCORDING TO WATER FLOW PROCESS ANALYSING</i>
P2-8	Yamashita <i>DEVELOPMENT OF A HIGH-FRAME-RATE CAMERA FOR PULSED NEUTRON TRANSMISSION SPECTROSCOPIC RADIOGRAPHY</i>
P2-9	Murakawa <i>MEASUREMENTS OF WATER DISTRIBUTION IN THROUGH-PLANE DIRECTION OF PEFC BY USING NEUTRON RADIOGRAPHY</i>
P2-10	Saito <i>DEVELOPMENT OF NEUTRON RADIOGRAPHY FACILITY FOR BOILING TWO-PHASE FLOW EXPERIMENT IN KYOTO UNIVERSITY RESEARCH REACTOR</i>
P2-11	Kim <i>INVESTIGATION FOR THE WATER BEHAVIOR IN PEMFC UNDER FLOW DIRECTION AND DIFFERENTIAL PRESSURE USING NEUTRON IMAGING TECHNIQUE</i>
P2-12	Wang <i>THE PROGRESS OF THERMAL AND COLD NEUTRON IMAGING FACILITIES AT CARR</i>

WEDNESDAY 6th October	
POSTER SESSION - 3	
P3-1	De Beer <i>BASIC GUIDELINES FOR THE DEVELOPMENT AND ESTABLISHMENT OF NEW NEUTRON IMAGING FACILITIES</i>
P3-2	Yin <i>SIMULATION STUDY ON THE DISPLACEMENT OF HYDROGEN ISOTOPES USING NEUTRON RADIOGRAPHY</i>
P3-3	Kickhofel <i>COLD NEUTRON TOMOGRAPHY OF ANNULAR COOLANT FLOW IN A DOUBLE SUBCHANNEL MODEL OF A BOILING WATER REACTOR</i>
P3-4	Bucherl (Oral maybe) <i>FILTERING ALGORITHM FOR DOTTED INTERFERENCES</i>
P3-5	Bucherl <i>NECTAR – A FISSION NEUTRON RADIOGRAPHY AND TOMOGRAPHY FACILITY</i>
P3-6	Kim <i>NEUTRON RADIOGRAPHY AND TOMOGRAPHY TO INSPECTION FOR USED PARTS OF COOLING-CHANNEL TURBINE BLADE OF AIRCRAFT</i>
P3-7	Kardjilov <i>HIGH RESOLUTION NEUTRON AND X-RAY IMAGING OF PARTIALLY WATER-SATURATED SILICA SAND</i>
P3-8	Kardjilov <i>HIGH RESOLUTION NEUTRON IMAGING USING CCD BASED DETECTORS</i>
P3-9	Murakawa <i>EFFECT OF THIN PLATE IN A VARIABLE CONDUCTANCE HEAT PIPE USING VISUALIZED NEUTRON RADIOGRAPHY</i>
P3-10	Murakawa <i>VISUALIZATION AND VOID FRACTION MEASUREMENT OF DECOMPRESSED BOILING FLOW IN A CAPILLARY TUBE</i>
P3-11	De Beer <i>NEUTRON TOMOGRAPHY ON GEOLOGICAL SAMPLES – PRELIMINARY RESULTS</i>
P3-12	De Beer <i>NEUTRON TOMOGRAPHY: A MECHANICAL REVERSE ENGINEERING TOOL</i>