

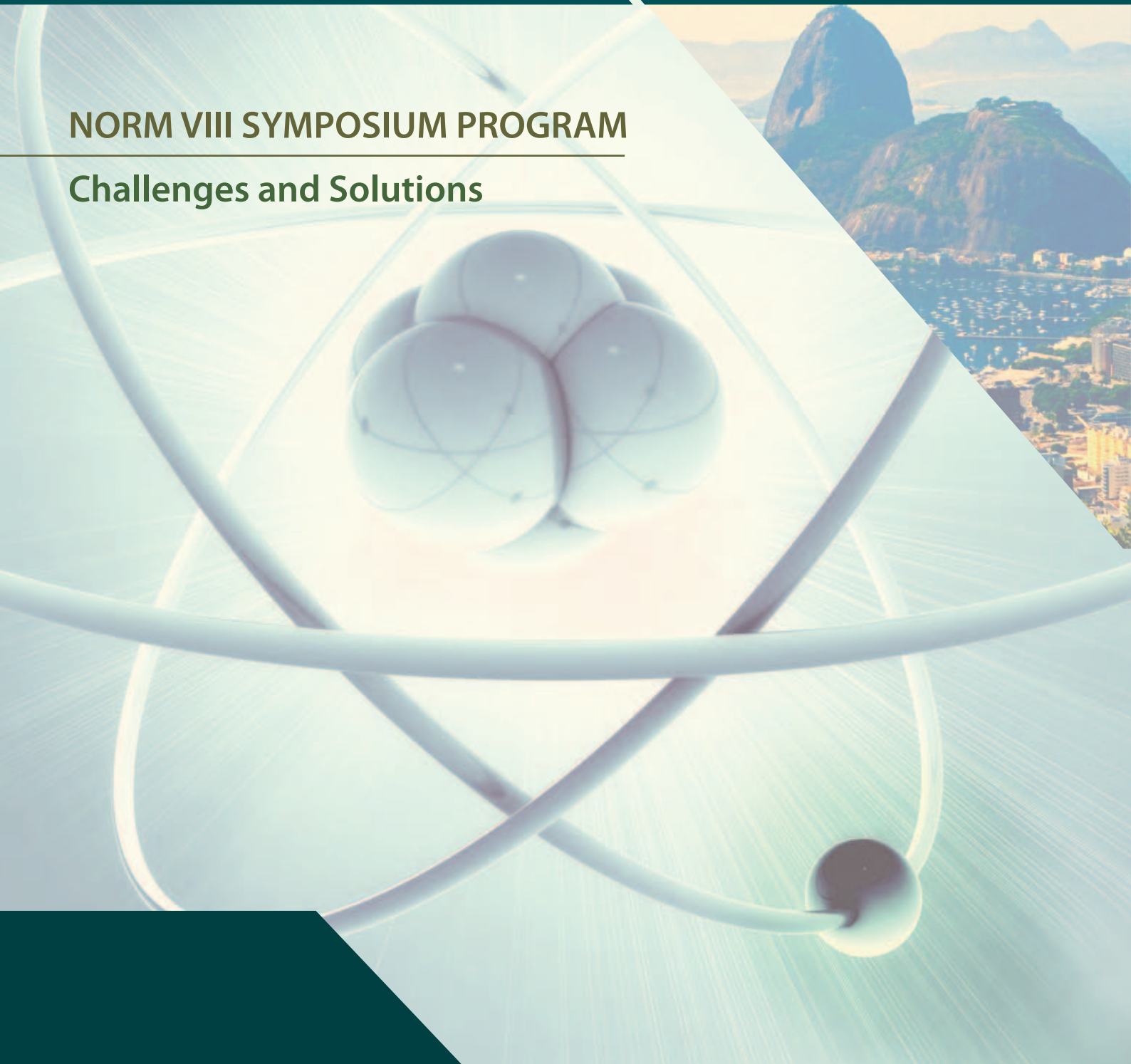


2016 Rio norm VIII

Eighth International Symposium on Naturally
Occurring Radioactive Material – NORM VIII
Rio de Janeiro, Brazil, October 18 -21, 2016

NORM VIII SYMPOSIUM PROGRAM

Challenges and Solutions



The NORM VIII Symposium in 2016 is the 8th event in a series starting in the Netherlands in 1997, followed by Germany in 1998, Belgium in 2001, Poland in 2004, Spain in 2007, Morocco in 2010 and China in 2013.

This Symposium will bring together a world-wide audience to the same city of Rio de Janeiro, where the first effort of a world-wide exchange of experiences in the NORM field has occurred seventeen years ago. The Technologically Enhanced Natural Radiation (TENR II) Symposium was attended by participants from 22 countries, representing all regions of the world.

The 2016 symposium will address the radiation protection control of naturally occurring radioactive materials (NORM), and will include the results of new research, explore practical case studies of industrial applications and waste disposal practices, evaluate the practical implication of international and national standards as well as identifying new societal needs and technical requirements for regulators and industry on NORM. Possible solutions for using, recycling and disposal of NORM residues will be another focus area, as well as the quality of NORM sampling and measurements.

The event is an essential platform for NORM industries, academic and research institutions, and regulatory authorities to share experiences, review progress made, identify opportunities and provide an in-depth analysis of current challenges. The symposium offers a multitude of possibilities and opportunities for networking.





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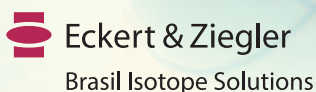
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- H.Burçin Okyar – IAEA – Austria
- Dejanira C. Lauria – Brazil
- Doug Chambers – Canada
- Emilie Tahera Van Deventer – WHO – Switzerland
- Hua Liu – China
- John G. Hunt – UNSCEAR Vice-chairman – Brazil
- Julian Hilton – United Kingdom
- Peter Waggit – Australia
- Rafael García-Tenorio – Spain
- Senliu Liu – China
- Vanusa M. D. Feliciano – Brazil

ORGANIZING COMMITTEE

- Dejanira da Costa Lauria – Instituto de Radioproteção e Dosimetria-(Chair) – IRD/CNEN
- Luiz Ernesto Matta-IRD – Instituto de Radioproteção e Dosimetria – (Co-Chair) – IRD/CNEN
- Agnaldo Kenji Fuzimo Martins-Mineração Taboca S/A
- Barbara Paci Mazzilli – Instituto de Pesquisas Energéticas e Nucleares – IPEN/CNEN
- Denise Levy – Sociedade Brasileira de Proteção Radiológica – SBPR
- Flávia Borges – Coordenação de Matérias Primas e Minerais – COMAP/CNEN
- Lillian Bueno – Instituto de Radioproteção e Dosimetria – IRD/CNEN/
- Marcelo Francis Maduar – Instituto de Pesquisas Energéticas Nuclear – IPEN
- Mônica Aquino Pires do Rio – Instituto de Radioproteção e Dosimetria – IRD/CNEN
- Paulo Roberto Ferreira – Instituto de Radioproteção e Dosimetria – IRD/CNEN
- Raul Alberto Sodre Villegas – Laboratório de Poços de Caldas – LAPOC/CNEN
- Rócio Glória dos Reis- Instituto de Radioproteção e Dosimetria – IRD/CNEN
- Sergio Albuquerque Gonzalez – Instituto de Radioproteção e Dosimetria – IRD/CNEN
- Vanusa Maria Delage Feliciano – Centro de Desenvolvimento da Tecnologia Nuclear – CDTN/CNEN



SCIENTIFIC COMMITTEE

Analia Cecilia Canoba – Autoridad Regulatoria Nuclear – Argentina

Andy Woodruffe – Federal Authority for Nuclear Regulation – United Arab Emirates

Barbara Mazzilli – Instituto de Pesquisas Energéticas Nucleares – IPEN – Brazil

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Fernando P. Carvalho – Campus Tecnológico Nuclear Universidade de Lisboa – Portugal

Horst Monken Fernandes – IAEA – Austria

Jeroen Welbergen- Central Organization for Radioactive Waste – The Netherlands

José Marcos de Oliveira Godoy – Sociedade Brasileira de Proteção Radiológica – SBPR

Juan Carlos Mora – Ciemat – Spain

Luiz Ernesto Matta – Instituto de Radioproteção e Dosimetria – Brazil

Michalik Boguslaw – Central Mining Institute – Poland

Nick Tsurikov – Calytrix Consulting – Australia

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Peter Shaw – Centre for Radiation, Chemical and Environmental Hazards – UK

Philip Egidi – US Environmental Protection Agency – USA

P.P. Haridasan – Bhabha Atomic Research Centre – India

Qifan Wu – Tsinghua University – China

Riaan van der Westhuizen – Palabora Mining Company – South Africa

Roberto A. Suarez Alvarado- Comisión Nacional de Seguridad Nuclear Y Salvaguardias – Mexico

Zhimen Fan – IAEA – Austria



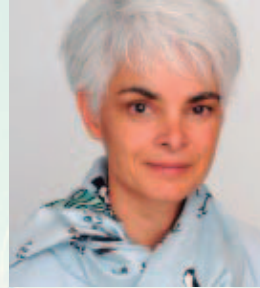
2016 Rio
norm VIII

Eighth International Symposium on Naturally
Occurring Radioactive Material – NORM VIII
Rio de Janeiro, Brazil, October 18 -21, 2016

INVITED SPEAKERS



Burçin Okyar



Emilie Van Deventer



Frank Harris



Horst Monken Fernandes



Jean-François Lecomte



John Hunt



Nick Tsurikov



Paulo Heilbron



Rafael Garcia-Tenório



Tanja Perko



Gert Jonkers





ALIMENTAÇÃO | FOOD

Restaurantes variados servindo salgados, grelhados, saladas, sanduiches, pizzas, entre outros no entorno.
Several restaurants serving snacks, grills, salads, sandwiches, pizza, among others, that you can see around the convention center.

ÁREAS DE PÔSTERES | POSTER AREAS

Localizada no térreo, atrás da área de exposição.
Located downstairs, behind the exhibition area.

MULTIMÍDIAS DESK

Horários: 18 | Out: das 08:00 às 18:30
19 à 21 | Out: das 08:30 às 18:30

Oct | 18 from 08:00 to 6:30pm
19 to 21 from 8:30 am to 6:30 pm

SECRETARIA LOCAL | LOCAL SECRETARIAT

A Secretaria estará à disposição dos congressistas para novas inscrições, entrega de credenciais dos participantes já inscritos e informações gerais nos seguintes dias e horários:

Horários: 18 | Oct: das 07:30 às 17:30
19 à 21 | Oct das 07:00 às 18:30

The Secretariat will be available for new participant registrations, accreditations hand out to already registered participants and general information on the following days and times:

Oct | 18 from 07:30 to 17:30
19 to 21, from 8:30 am to 18:30 pm

TRADUÇÃO SIMULTÂNEA | SIMULTANEOUS TRANSLATION

Haverá serviços de tradução simultânea nas principais plenárias do congresso – Inglês/Português e Português/Inglês

There will be simultaneous translation services during the main sessions of the Congress – English/Portuguese and Portuguese/ English



18/10/2016 Terça-feira	Salão Salgueiro
07:00 às 09:00	CURSO C3 Regulamentação Nacional Aplicável, Transporte e rejeitos - NORM, Transporte e Rejeitos PALESTRANTE - Ana Maria Xavier PALESTRANTE - Flávia Schenato
19/10/2016 Quarta-feira	Salão Salgueiro
07:00 às 09:30	CURSO C3 Regulamentação Nacional Aplicável, Transporte e rejeitos - NORM, Transporte e Rejeitos PALESTRANTE - Ana Maria Xavier PALESTRANTE - Flávia Schenato
20/10/2016 Quinta-feira	Salão Salgueiro
07:00 às 09:30	CURSO C2 Programas de Proteção Radiológica Ambiental e Ocupacional Direcionado – para NORM Proteção Radiológica Ocupacional PALESTRANTE -Luiz Ernesto Santos de Carvalho Matta PALESTRANTE - Paulo Roberto Rocha Ferreira
21/10/2016 Sexta-feira	Salão Salgueiro
07:00 às 09:30	CURSO C2 Programas de Proteção Radiológica Ambiental Direcionado – para NORM Proteção Radiológica Ocupacional PALESTRANTE - Dejanira da Costa Lauria e Sueli Silva Peres





BRAZIL

Brazil is the largest country in South America and the fifth largest in the world by geographical area (47% of the continent's territory) and by population (over 200 million people).

It is the only country in Latin America where Portuguese is primarily spoken and one of the most culturally and ethnically diverse nations in the world, due to extensive immigration from all corners of the world.

Limited by the Atlantic Ocean to the east, Brazil has a 7,000-kilometer coast. It borders Venezuela, Guiana, Suriname and French Guiana to the north; Colombia to the northwest; Bolivia and Peru to the west; Argentina and Paraguay to the southwest; and Uruguay to the south.

The Brazilian economy is the largest in South America and the southern hemisphere, as well as the seventh largest in the world. The country is a founding member of United Nations, G20, Community of Portuguese Language Countries (CPLP), Latin Union, Organization of American Countries (OAS), Organization of Ibero-American States (OEI), Common Market of the South (Mercosur), Union of South American Nations (Unasur) and BRICs.

Brazil is also the home for diverse wildlife, ecosystems and vast natural resources, spread over a great variety of protected habitats.

RIO DE JANEIRO

The most well-known Brazilian city, Rio de Janeiro is the gate to international tourism in Brazil, as well as the main touristic destination both in Latin America and in the southern hemisphere.

The city has a long tradition of hosting large scale events. Rio de Janeiro promotes two of the largest festivals in the world: its famous Carnival and the New Year's Eve at Copacabana Beach, which gathers more than two million people every year.

The "Wonderful City" is hospitable and has large hotel infrastructure. There are 30,000 rooms prepared to lodge Brazilian and foreign tourists. Furthermore, by the end of 2015, 17,000 new hotel rooms will be added to the total number.



OPENING SESSION

09:00 - 9:30

WELCOME ADDRESSES

Representatives of:

Brazilian Commission of Nuclear Energy (**CNEN**): Renato Machado Cotta (president)

International Atomic Energy Agency (**IAEA**): Burçin Okyar

International Commission on Radiological Protection (**ICRP**): Jean-Francois Lecomte

United Nations Scientific Committee on the Effects of Atomic Radiation (**UNSCEAR**): John Hunt

World Health Organization (**WHO**): Emilie Tahera Van Deventer

Chair of the Organizing Committee: Dejanira da Costa Lauria

SESSION 01

INTERNATIONAL AND NATIONAL STANDARDS ON NORM PRACTICAL IMPLICATIONS

Chair: NICK TSURIKOV

9:30 - 10:00

H.Burçin Okayar, IAEA

SAFETY REQUIREMENTS IN THE IAEA SAFETY STANDARDS APPLICABLE TO NORM ACTIVITIES FOR PROTECTION OF WORKERS, THE PUBLIC AND THE ENVIRONMENT

10:00 - 10:30

Jean Francois Lecomte, ICRP

ICRP AND NORM EXPOSURE: A REPORT IN PREPARATION

10:30 - 11:00

Paulo Heibron, CNEN

NORM INDUSTRIAL ACTIVITIES MOST LIKELY TO REQUIRE REGULATORY CONSIDERATIONS

11:00 - 11:20

COFFEE- POSTER SESSION

11:20 - 11:35

Michael Tatzber, Austria

STANDARDS FOR NORM-INDUSTRIAL PRACTICES IN THE EU-BSS GRADED APPROACH – ELABORATION OF A STRATEGY FOR AUSTRIA

11:35 - 11:50

Philip Vincent Egidi, United States of America

UPDATES TO TENORM MANAGEMENT IN THE UNITED STATES

11:50 - 12:05

Lucia TC Neder, Brazil

IMPACTS OF BRAZILIAN REGULATION (CNEN NN.8.01/2014) ON NORM MANAGEMENT

12:05 - 12:20

Rafael Garcia-Tenorio, Spain

CHALLENGES IN IMPLEMENTING THE CHANGE IN REGULATIONS IN THE NORM INDUSTRY. THE NEW BSS

12:20 - 12:35

SHORT ORAL POSTER PRESENTATIONS (2)

12:35 - 13:30

Round Table- all- International and national standards on NORM – practical implications;

Themes: what are the main challenges? how regulators and industries can improve the RP regarding NORM?

13:30 - 15:00

LUNCH

SESSION 02 RISK COMMUNICATION (WORKERS AND PUBLIC)

Chair: VANUSA FELICIANO

15:00 - 15:30

Tanja Perko, Belgium

MISSION (IM)POSSIBLE: COMMUNICATION ABOUT NORM TOPICS AND STAKEHOLDER ENGAGEMENT

15:00 - 15:45

Vanusa Maria Delage Feliciano, Brazil

IMPORTANCE OF PARTICIPATION OF NORM INDUSTRIES IN DEVELOPING NORM STRATEGIES

15:45 - 16:00

Rafael Garcia-Tenorio, Spain

THE BRIDGE FROM BOTH ENDS? COMPREHENSIVE EXTRACTION AND ZERO WASTE STRATEGIES FOR NORM INDUSTRY TAILINGS AND RESIDUES.

16:00 - 16:15

Rafaella Menezes Ayllon, Brazil

ACCEPTANCE OF A NUCLEAR INSTALLATION IS RELATED TO COMMUNICATION TO LOCAL RESIDENTS?

16:00 - 16:20

COFFEE- POSTER SESSION

16:20 - 16:30

SHORT ORAL POSTER PRESENTATIONS (2)

16:30 - 17:00

DISCUSSION

Theme: how improve the communication between industries and stakeholders?

POSTER SESSION 01 INTERNATIONAL AND NATIONAL STANDARDS ON NORM PRACTICAL IMPLICATIONS

Mila Kristiina Pelkonen, Finland

NORM-RELATED MINING IN NORDIC COUNTRIES: LEGISLATION, PRACTICES AND CASE STUDIES;

Francisco Cesar Augusto da Silva, Brazil

RADIOLOGICAL RISK CLASSIFICATION OF NORM INDUSTRIES IN BRAZIL

POSTER SESSION 02 RISK COMMUNICATION (WORKERS AND PUBLIC)

Denise Levy, Brazil

RISK COMMUNICATION TO THE GENERAL PUBLIC: HEALTH RISKS OF LOW-DOSE IONIZING RADIATION

Hector Hugo Medrado, Brazil

GROUNDWATER CHARACTERIZATION IN A URANIUM PROVINCE AREA



SESSION 03

RADIOACTIVE WASTE MANAGEMENT & DISPOSAL

Chair: HORST FERNANDES

9:30 - 10:00

Nick Tsurikov, Australia

THE MANAGEMENT OF NORM RESIDUES – PRACTICAL ASPECTS

10:00 - 10:15

Rahaf Ajaj, United Arab Emirates

RADON RESISTANT CONSTRUCTION SYSTEM: GUIDELINES TO CONTROL RADIOACTIVITY RELEASES FROM PHOSPHATE FERTILIZERS IN THE RESIDENTIAL AREAS

10:15 - 10:30

Mohammad Salem Al-Hwaiti, Jordan

ASSESSMENT OF THE RADIOLOGICAL IMPACTS OF TREATED PHOSPHOGYPSUM USED AS THE MAIN CONSTITUENT OF BUILDING MATERIALS IN JORDAN

10:30 - 10:45

Peter Schmidt, Germany

MANAGEMENT OF RADIOACTIVE RESIDUES AND WASTES GENERATED DURING REMEDIATION OF THE URANIUM PRODUCTION LEGACY SITES IN GERMANY (WISMUT SITES)

10:45 - 11:00

Horst Monken Fernandes, IAEA

APPROACHES AND CHALLENGES IN THE MANAGEMENT OF NORM RESIDUES AND WASTES IN IAEA MEMBER STATES

11:00 - 11:15

Barbara Paci Mazzilli

RADIOLOGICAL IMPLICATIONS OF USING PHOSPHOGYPSUM AS BUILDING MATERIAL

11:15 - 11:30

Fernando P. Carvalho

ASSESSMENT OF RADIONUCLIDE BEHAVIOUR IN POTENTIAL USES OF PHOSPHOGYPSUM

11:30 - 11:50

COFFEE- POSTER SESSION

11:50 - 12:05

Leo P.M. Van Velzen, Netherland

NORM MANAGEMENT IN THE NETHERLAND

12:05 - 12:20

Zoltan Sas, United Kingdom

COMPARISON OF EXCESS RADIOLOGICAL RISK OF BUILDING MATERIALS AND INDUSTRIAL BY-PRODUCTS ACCORDING TO I-INDEX (EU-BSS) AND REVISED ROOM MODEL (IAEA SSG-32)

12:20 - 12:35

Sheldon Landsberger, United States of America

AN IN-FIELD DEPLOYABLE CSI DETECTOR TO DETERMINE 226,228RA IN NORM OIL SCALE



SESSION 03

RADIOACTIVE WASTE MANAGEMENT & DISPOSAL

12:35 - 12:45 SHORT ORAL POSTER PRESENTATIONS (4)

12:45 - 13:30 DISCUSSION

13:30 - 15:00 LUNCH

SESSION 04

NATURAL RADIOACTIVITY

Chair: DEJANIRA DA COSTA LAURIA

15:00 - 15:30 **Invited talk- Emilie Tahera Van Deventer, WHO**
A PUBLIC HEALTH PERSPECTIVE

15:30 - 16:00 **Invited talk- John Hunt-UNSCEAR**
UNSCEAR AND EXPOSURE TO NATURALLY OCCURRING RADIATION

16:00-16:20 SHORT ORAL POSTER PRESENTATIONS (10)

16:20 - 16:40 COFFEE- POSTER SESSION

16:20 - 16:40 SHORT ORAL POSTER PRESENTATIONS (16)

17:15 - 18:00 DISCUSSION

POSTER SESSION 3

RADIOACTIVE WASTE MANAGEMENT & DISPOSAL

Frøydis Meen Wærsted, Norway

LEACHING OF NORM AND TOXIC METALS FROM ALUM SHALE UNDER DIFFERENT REDOX CONDITIONS

Francisco Cesar Augusto da Silva, Brazil

ESTIMATION OF ENVIRONMENTAL RADIOLOGICAL DOSES AND RISK ON DISPOSAL OF OIL SCALE WASTES
NORM BY LANDSPREADING AND LANDFILL USING THE RESRAD-OFFSITE CODE

Amanda Cristine da Silva, Brazil

REACTIVE BARRIER DESIGN FOR MITIGATING ACID MINE DRAINAGE

Umberto Siciliano, Brazil

FABRICATION OF TITANIUM DIOXIDE SUPPORTS FOR CERAMICS MEMBRANES USED IN THE TREATMENT OF
NUCLEAR WASTE

Mariana Martins Dias, Brazil

URANIUM RECOVERY FROM ACID MINE DRAINAGE TREATMENT RESIDUE



POSTER SESSION 4 NATURAL RADIOACTIVITY

Ana Lia Noguera, Uruguay

NATURAL RADIOACTIVITY IN CLOTILDE BRIOZZO LAGOON'S SEDIMENTS AND WATER

Germán Azcune, Uruguay

GROSS ALPHA AND GROSS BETA RADIOACTIVITY DETERMINATION IN ROCHA'S COASTAL GROUNDWATER

Matheus FS Casagrande, Brazil

THE USE OF A HPGE GAMMA RAYS DETECTOR FOR GROSS ALPHA AND BETA MEASUREMENTS IN WATER SAMPLES

Ricardo Washington Dutra Garcêz, Brazil

DETERMINATION OF THE SPECIFIC ACTIVITIES OF RA-226, RA-228 AND K-40 IN SAMPLES OF MINERAL NITROGEN, POTASSIUM AND PHOSPHATE FERTILIZERS

Ricardo Washington Dutra Garcêz, Brazil

DETERMINATION OF RA-226, RA-228 AND E K-40 SPECIFIC ACTIVITIES IN SAMPLES OF MINERAL NPK COMPOUND FERTILIZER

Elder Magalhães De Souza, Brazil

USE OF NAI(TL) DETECTORS FOR ENVIRONMENTAL GAMMA SURVEY AND BACKGROUND RADIATION MAPPING OF VENUES AND OTHER STRATEGIC LOCATIONS FOR MAJOR PUBLIC EVENTS

Yumi Rocha Hashimoto, Brazil

INDOOR RADON ACTIVITY CONCENTRATION IN UTFPR/BRAZIL

Claudia Marques Peixoto, Brazil

A STUDY OF THE VARIABILITY AND SPATIAL DISTRIBUTION OF NATURAL RADIONUCLIDES IN THE STATE OF MINAS GERAIS

Mychelle Munyck Linhares Rosa, Brazil

NATURAL RADIONUCLIDES IN FOOD AND WATER FROM A HIGH BACKGROUND RADIATION AREA IN A BRAZILIAN SOUTHWEST REGION

Edson Gonçalves Moreira, Brazil

NATURALLY OCCURRING RADIONUCLIDES IN A BRAZILIAN MUSSEL REFERENCE MATERIAL

Jamal Ouguidi, Morocco

STUDY OF THE TRANSFER OF ²³⁸U, ²³²Th AND ²²²Rn FROM SOIL TO CEREALS AND VEGETABLES AND RESULTING RADIATION DOSES TO RURAL CONSUMERS

Jamal Ouguidi, Morocco

²²²Rn, ²²⁰Rn AND THEIR PROGENIES MEASURED IN THE AIR OF DIFFERENT DWELLINGS AND WORKPLACES AND RESULTING ALPHA RADIATION DOSES TO THE EYES OF INDIVIDUALS

Jamal Ouguidi, Morocco

EVALUATION OF COMMITTED EFFECTIVE DOSES TO SKIN FROM THE APPLICATION OF VARIOUS PLANT OILS INSIDE SAUNAS BY BATHERS

Jamal Ouguidi, Morocco

²³⁸U AND ²³²Th CONCENTRATIONS MEASURED IN DIFFERENT MEDICAL DRUGS BY USING SOLID STATE NUCLEAR TRACK DETECTORS AND RESULTING RADIATION DOSES TO THE SKIN OF PATIENTS



POSTER SESSION 4 NATURAL RADIOACTIVITY

Talita de Oliveira Santos, Brazil

NATURAL RADIOACTIVITY IN BRAZILIAN UNDERGROUND MINES

André Rodrigo da Silva, Brazil

NATURAL RADIONUCLIDES OF THE U-238 AND TH-232 SERIES AND K-40 DETERMINED IN SOIL AND SEDIMENT FROM PONTE NOVA RESERVOIR, SÃO PAULO, BRAZIL

Danila Carrijo da Silva Dias, Brazil

INDOOR RADON INTERCOMPARISON EXERCISES: INTERNATIONAL EXPERIENCES AND PERFORMANCE EVALUATION AT THE BRAZILIAN COMMISSION FOR NUCLEAR ENERGY - POÇOS DE CALDAS LABORATORY (CNEN/LAPOC)

Laíssa Adriana Bonifácio dos Santos – Brazil

PRELIMINARY RESULTS OF 226RA, 228RA AND 210PB CONCENTRATION IN MINERAL WATERS FROM PARQUE DAS ÁGUAS DE CAMBUQUIRA AND MARIMBEIRO (MG)

Sandra Regina Damatto, Brazil

ASSESSMENT OF U-238, TH-232, RA-226 AND PB-210 CONCENTRATIONS IN SOIL SAMPLES COLLECTED AT IPEN CAMPUS, SÃO PAULO, BRAZIL

Sandra Regina Damatto, Brazil

ASSESSMENT OF U-238, TH-232, RA-226, RA-228 AND PB-210 CONCENTRATIONS IN BRAZILIAN ROLL SMOKE, STRAW CIGARETTE AND MENTHOLATED CIGARETTE

Thiago Corrêa Lacerda, Brazil

OPENINGS AND TEMPERATURE ARE IMPORTANT FACTORS TO DECREASE THE LUNG CANCER RATE IN MINE WORKERS

Rócio Glória Dos Reis, Brazil

GEORAD : GEOREFERENCED DATABASE OF ENVIRONMENTAL RADIOACTIVITY IN BRAZIL

Arykerne Nascimento Casado da Silva, Brazil

NATURAL ENVIRONMENTAL IONIZING RADIATION FROM SOIL: CONTAMINATION OR ANOMALY?

Adelaide Gondin Fonseca, Brazil

TEMPERATURE SHORT-TERM STABILITY TEST TO URANIUM SOIL REFERENCE MATERIAL

Thayná Berenike Silva Nascimento, Brazil

UNCERTAINTY ESTIMATION USING THE SPREADSHEET APPROACH FOR DETERMINATION OF 210PO IN ENVIRONMENTAL SAMPLES BY ALPHA SPECTROMETRY

Brigitte Roxana Soreanu Pecequilo

226RA, 232TH AND 40K CONCENTRATIONS IN BRAZILIAN WALL PAINTS

Fernando Araújo Ribeiro, Brazil

A SPATIAL SURVEY OF RADIOACTIVITY IN BRAZILIAN TERRITORY

Heleine Cardoso De Almeida, Brazil

A COMPARISON OF 210PB AND 210PO ACTIVITY CONCENTRATION ON SEDIMENT DATING

Arthur Athayde Meneghini, Brazil

PRELIMINARY RESULTS OF SEASONAL VARIATION OF RA-226, RA-228 AND PB-210 CONCENTRATIONS IN MINERAL WATERS FROM CAXAMBU, BRAZIL.

Joseilton Marques De Souza, Brazil

ASSESSMENT OF NATURAL RADIONUCLIDES OF THE 238U AND 232TH SERIES DETERMINED IN SOIL PROFILES AND SEDIMENT CORES FROM TAIÇAQUEBA RESERVOIR, SÃO PAULO, BRAZIL

Marcia Pires de Campos, Brazil

ASSESSMENT OF 222RN CONCENTRATION IN THE SOIL OF AROUND IPEN FACILITIES

Jamal Ouguidi, Morocco

ANALYSIS OF 238U, 232TH, 222RN AND 220RN IN FRESH AND CANNED FISH SAMPLES AND RESULTING ALPHA RADIATION DOSES TO THE CONSUMERS

Dr. Saïdou Saïdou, Cameroon

CAR-BORNE SURVEY IN THE URANIUM BEARING REGION OF POLI, CAMEROON: COMPARISON BETWEEN IN-SITU AND LABORATORY MEASUREMENTS AND EXTERNAL RADIATION DOSE ASSESSMENT

Ndontchueng Moyo Maurice, Cameroon

RADIOLOGICAL MONITORING AND STATISTICAL APPROACH OF PRIMORDIAL AND ANTHROPOGENIC RADIONUCLIDES (226RA, 232TH, 40K, 235U AND 137CS) IN SOIL SAMPLES OF BAUXITE ORE DEPOSITS SITE IN WESTERN OF CAMEROON RADIOATIVIDADE NATURAL

SESSION 05

ENVIRONMENTAL IMPACT ASSOCIATED WITH NORM INDUSTRIES

Chair: BARBARA MAZZILLI

9:30 - 10:00

Rafael Garcia-Tenorio, Spain

RADIOLOGICAL EVALUATION ASSOCIATED TO THE MINING OF MONAZITE IN CENTRAL SPAIN

10:00 - 10:15

Mariza Ramalho Franklin, Brazil

ASSESSING THE RADIOLOGICAL IMPACT OF THE CAETITÉ URANIUM PRODUCTION CENTER (BRAZIL) ON LOCAL WATER RESOURCES

10:15 - 10:30

Lindis Skipperud, Norway

DISPERSION AND TRANSFER OF NOR & METALS DUE TO CONSTRUCTION IN U-BEARING MINERALS

10:30 - 10:45

Pedro Henrique Dutra, Brazil

EVALUATION OF THE ENVIRONMENTAL IMPACT IN THE REGION OF THE CALDAS URANIUM MINE - MG DUE TO THE PRESENCE OF U, TH AND METALS IN SEDIMENT, ROCKS, WASTES AND FERTILIZERS

10:45 - 11:00

Kelly Jones, United Kingdom

ASSESSMENT OF RADIATION EXPOSURES FROM DISPOSAL OF TITANIUM DIOXIDE INDUSTRY WASTE BY LANDFILL: COMPARISON OF MODELS WITH SITE-SPECIFIC MEASUREMENTS

11:00 - 11:20

COFFEE- POSTER SESSION

11:20 - 11:35

Nivaldo Carlos da Silva, Brazil

NATURAL RADIONUCLIDES IN STREAM SEDIMENTS OF POÇOS DE CALDAS PLATEAU - BRAZIL

11:35 - 11:50

Ababacar Ndao, Senegal

RADIONUCLIDES AND PRELIMINARY RADIOLOGICAL ASSESSMENT IN THE PHOSPHATE INDUSTRY OF SENEGAL

11:50 - 12:05

Fernando P. Carvalho, Portugal

HEAVY MINERAL SANDS EXPLOITATION AND EXPOSURE TO IONIZING RADIATION IN MOZAMBIQUE

12:05 - 12:20

Boguslaw Michalik, Poland

UNIFIED APPROACH TO ENVIRONMENTAL IMPACT ASSESSMENT CAUSED BY RELEASES FROM NORM INDUSTRY

12:20 - 12:35

SHORT ORAL POSTER PRESENTATIONS (6)

12:35 - 13:00

discussion

13:00 - 14:30

LUNCH



SESSION 06

INDUSTRY SPECIFIC STUDIES (E.G.OIL, GAS, COAL, HEAVY METAL)

Chair: LUIZ ERNESTO MATTA

14:30 -15:00

Nick Tsurikov, Australia

PRACTICAL CASES OF NORM TRANSPORT – PROBLEMS AND SOLUTIONS

15:00 -15:30

Gert Jonkers, Netherlands

NORM IN THE GAS & OIL INDUSTRY- NATURAL RADIOACTIVITY FROM CRADLE TO GRAVE

15:30 -15:45

Esa Pohjolainen, Finland

NORM-RELATED MINERAL DEVELOPMENTS IN FINLAND

15:45 -16:00

Mengistu Balcha, Ethiopia

RADIONUCLIDES IN TANTALITE ORE AND RADIATION EXPOSURE IN TANTALITE MINING IN ETHIOPIA.

16:00 -16:15

Gert Jonkers, Netherlands

GEOTHERMAL ENERGY AND NORM IN THE NETHERLANDS

16:15 -16:30

Banu Ozden, Turkey

INVESTIGATION OF NORM IN ASH PRODUCED FROM YATAGAN COAL-FIRED THERMAL POWER PLANTS IN TURKEY

16:30 -16:50

COFFEE- POSTER SESSION

16:50 -17:05

SHORT ORAL POSTER PRESENTATIONS (6)

17:05 -17:30

DISCUSSION



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Eighth International Symposium on Naturally
Occurring Radioactive Material – NORM VIII
Rio de Janeiro, Brazil, October 18 -21, 2016

THURSDAY 20 OCTOBER (DAY 3)

POSTER SESSION 5

ENVIRONMENTAL IMPACT ASSOCIATED WITH NORM INDUSTRIES

Wagner De Souza Pereira , Brazil

NATURAL URANIUM IN BIOLOGICAL MATERIAL FROM HIGH NATURAL RADIOACTIVITY AREAS IN BRAZIL

Rafael Garcia-Tenorio, Spain

ASSESSMENT OF NORM-CONTAMINATED WASTE ASSOCIATED WITH OIL AND GAS PRODUCTION FROM GHANAIAN OILFIELDS

Raul Villegas, Brazil

NORM ASSESSMENT IN WATER TREATMENT SYSTEMS AT POÇOS DE CALDAS/BR

Heliana de Azevedo Franco Do Nascimento

OCCURRENCE OF BACTERIAL LEACHING IN URANIUM MINE EFFLUENTS, UTM/INB, CALDAS, MG

Luiz Flavio Lopes Teixeira, Brazil

DETERMINATION OF URANIUM AND THORIUM IN SEDIMENTS FROM CANANÉIA-IGUAPE SYSTEM BY SPECTROPHOTOMETRY WITH ARSENAZO III

Agbalagba Oghenyerhovwo Ezekiel, Brazil

ASSESSMENT OF EXCESS LIFETIME CANCER RISK FROM NORM IN EFFURUN AND WARRI CITY OF DELTA STATE, NIGERIA

POSTER SESSION 6

INDUSTRY SPECIFIC STUDIES (OIL, GAS, COAL, HEAVY METAL)

Bodor Balázs Károly, Hungaria

NORM-AL OPERATION OF THE HUNGARIAN COAL POWER PLANTS

Mohammad Hamod Alharbi, Saudi Arabia

RADIATION FROM OIL FIELDS

Andreas Reichelt, Germany

EVALUATION OF NORM RESIDUES FROM THE PROCESSING OF CRUDE OIL IN A REFINERY

Rafael Garcia-Tenorio, Spain

DETERMINATION OF LEVELS OF RADIOACTIVITY IN NORM GAS LANTERN MANTLES SOLD IN MEXICO

Agbalagba Oghenyerhovwo Ezekiel, Brazil

SPATIAL DISTRIBUTION OF NORM IN SOIL, SEDIMENT AND WATERS IN OIL PRODUCING AREAS IN NIGER DELTA REGION OF NIGERIA

Lígia S. Faria Almeida, Brazil

210PB IN NORM FROM OIL AND GAS EXPLORATION

Tetiana, Ukraine

NORM WASTE IN SOME MINING AND PROCESSING INDUSTRIES OF UKRAINE



SESSION 07 OCCUPATIONAL RADIATION PROTECTION AND RADON&THORON | METROLOGY

Chair: H.BURÇIN OKYAR

9:30 -10:00

Frank Harris, Australia

UMEX PROJECT- AN IAEA SURVEY OF GLOBAL URANIUM MINING AND PROCESSING OCCUPATIONAL DOSES

10:00 -10:15

Fu-dong Liu, China

THE ESTIMATION OF THE NORMALIZATION COLLECTIVE DOSE AT PRESENT IN CHINA

10:15 -10:30

H.Burcin Okyar, IAEA

A NEW IAEA SAFETY REPORT ON OCCUPATIONAL RADIATION PROTECTION IN THE URANIUM MINING AND PROCESSING INDUSTRY

10:30 -10:45

Fernando P. Carvalho, Portugal

INITIAL ASSESSMENT OF RADIONUCLIDES IN NORM MATERIALS IN ZIMBABWE

10:45 -11:05

SHORT ORAL POSTER PRESENTATIONS (9)

11:05 -11:40

DISCUSSION

11:40 -12:00

COFFEE- POSTER SESSION

SESSION 08 DECOMMISSIONING AND REMEDIATION

Chair: RAPHAEL GARCIA-TENORIO

12:00 -12:15

Horst Fernandes, IAEA

THE EXPERIENCE OF THE IAEA IN ASSISTING ITS MEMBER STATES IN IMPLEMENTING REMEDIATION PROJECTS

12:15 -12:30

Lin Iyu Teng, Malaysia

DECOMMISSIONING OF MINERAL PROCESSING PLANT AND REMEDIATION OF NORM CONTAMINATED SITES

12:30 -12:45

Tetiana Lavrova, Ukraine

CHARACTERIZATION OF U-PRODUCTION RESIDUES, CONTAINING HIGH ACTIVITY CONCENTRATIONS OF TH-230 AND RA-226 AT THE FORMER PCHP U-PRODUCTION LEGACY SITE IN UKRAINE

12:45 -13:00

Fabian Rechberger, Austria

EVALUATION AND SURVEY OF NORM LEGACY SITES IN AUSTRIA



SESSION 08 DECOMMISSIONING AND REMEDIATION

13:00 - 15:00

LUNCH

15:00 - 15:15

John Rowat, IAEA

NEW IAEA TRAINING MATERIALS FOR REMEDIATION OF URANIUM LEGACY SITES

15:15 - 15:30

Zhiwen Fan, IAEA

OVERVIEW OF IAEA SAFETY GUIDE D549 MANAGEMENT OF RADIOACTIVE RESIDUES FROM URANIUM PRODUCTION AND OTHER NORM ACTIVITIES.

15:30 - 15:45

Heber Luiz Caponi Alberti, Brazil

HYDROGEOCHEMICAL AND ISOTOPIC STUDY OF GROUNDWATER APPLIED IN ENVIRONMENTAL REMEDIATION FROM OSAMU UTSUMI/INB URANIUM MINE

15:45 - 16:00

SHORT ORAL POSTER PRESENTATIONS (4)

16:00 - 16:30

DISCUSSION

16:30 - 17:00

CONCLUSION AND CLOSURE CERIMONY



POSTER SESSION 07 OCUPATIONAL RADIATION PROTECTION AND RADON&THORON | METROLOGY

Delcy Azevedo Py Junior, Brazil

RADIATION PROTECTION OPTIMIZATION IN THE ORE TREATMENT UNIT OF CALDAS MG BRAZIL

Evaldo Paulo Paulo Oliveira, Brazil

222RN CONCENTRATION MEASUREMENT IN AIR AND WATER WITH DETECTORS LIABILITIES AND ASSETS COMPARISON OF RESULTS AND EFFICIENCIES

Wagner De Souza Pereira, Brazil

136 ASSESSMENT OF EXTERNAL DOSE AT THE FIRST URANIUM MINE IN BRAZIL.

Luz Anny Pamela Anny Ochoa Parra, Colombia

EXTENDED SOURCE EFFICIENCY CORRECTION AND OPTIMIZATION OF THE SAMPLE POSITION TO MEASURE THE CONCENTRATIONS OF NORM USING A HPGE DETECTOR

Luciana Vieira De Santana, Brazil

DETERMINATION OF THE MINIMUM SAMPLE MASS OF U3SI2 TO BE USED AS CANDIDATE REFERENCE MATERIAL FOR CHEMICAL ANALYSES OF TOTAL URANIUM AND TOTAL SILICIDE

José Marcus Marcus Godoy, Brazil

ELEVATED URANIUM CONCENTRATION ON SERRA DOS ORGÃOS GROUNDWATER SAMPLES

Evelin Silva Koch, Brazil

DETERMINATION OF URANIUM AND THORIUM AND PREPARATION OF SOIL AND SEDIMENT SAMPLES.

Thammiris M. El Hajj, Brazil

RADIOLOGICAL INDEX DETERMINATION AND CORRELATION BETWEEN RADIOACTIVITY AND STABLE ELEMENTS IN ORNAMENTAL ROCKS

Brigitte Roxana Soreanu Pecequilo, Brazil

SELF-ATTENUATION FACTORS IN GAMMA-RAY SPECTROMETRY OF NORM SAMPLES

POSTER SESSION 08 DECOMMISSIONING AND REMEDIATION

Zuleica Carmen Castilhos, Brazil

METAL AND NORMS AVAILABILITY IN TREATED COAL MINING WASTES FROM SANTA CANTARINA STATE-BRAZIL

Carla Rolim Ferrari, Brazil

ACUTE TOXICITY OF MANGANESE TO CERIODAPHNIA SILVESTRII AND DAPHNIA MAGNA IN BIOASSAYS AND THE POTENTIAL TOXICITY OF THIS METAL IN THE URANIUM MINE EFFLUENT

Flavio Henrique de Souza Moreira, Brazil

DETERMINATION OF NATURAL RADIOACTIVE 226RA, 210PB, 228RA, TH AND U IN RIBEIRÃO DAS ANTAS SEDIMENTS IN EQUIDISTANT LOCATIONS URANIUM MINE IN DECOMMISSIONING SPILLWAY

Fernanda do Carmo Salomão, Brazil

DETERMINATION OF GUIDING VALUES FOR NATURAL RADIONUCLIDES IN SOILS IN THE STATE OF MINAS GERAIS

