Final Symposium of COST NETWORK “NORM4Building”

*Use of by-products in construction: dealing with natural radioactivity*

**Rome, Istituto Superiore di Sanità (National Institute of Health), 6th-8th June 2017**

**Program**

### 6th June

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00-14:30</td>
<td>Introduction</td>
<td>F. Bochicchio, C. Nuccetelli, W. Schroeyers</td>
<td>Introduction</td>
</tr>
<tr>
<td>14:30-17:00</td>
<td>Session 1: NORM or NOT?</td>
<td>CHAIR Rosabianca Trevisi</td>
<td>NORMalisation</td>
</tr>
<tr>
<td>14:30-15:00</td>
<td>Key-Note</td>
<td>G. Jonkers</td>
<td>Coal bottom ash natural radioactivity</td>
</tr>
<tr>
<td>15:00-15:30</td>
<td>Key-Note</td>
<td>M. Sanjuán</td>
<td>Coal bottom ash natural radioactivity</td>
</tr>
<tr>
<td>15:30-16:00</td>
<td>Coffee break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:00-16:20</td>
<td>Presentation</td>
<td>K. Kovler</td>
<td>The book of NORM4BUILDING: Aims, terminology and introduction</td>
</tr>
<tr>
<td>16:20-16:40</td>
<td>Presentation</td>
<td>S. Bucci</td>
<td>Characterization of Australian garnet abrasive and waste deriving from waterjet cutting in the framework of radiological legislation</td>
</tr>
<tr>
<td>16:40-17:00</td>
<td>Presentation</td>
<td>F. Puertas</td>
<td>Impact of SCM incorporated in the alkali-activated matrix. Radiological and leaching studies</td>
</tr>
<tr>
<td>Time</td>
<td>Session Title</td>
<td>Speaker(s)</td>
<td>Details</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9:00-12:30</td>
<td><strong>Session 2: New options for the reuse of NORM in construction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>CHAIR</strong> Francisca Puertas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00-9:30</td>
<td>Key-note</td>
<td>A. Janssens</td>
<td>Challenges in the national implementation of the requirements of the EU-BSS with regard to NORM industries and building materials</td>
</tr>
<tr>
<td>9:30-10:00</td>
<td>Key-note</td>
<td>F.J. Maringer</td>
<td>The European joint research project MetroNORM - Main findings and impact on regulators and industry</td>
</tr>
<tr>
<td>10:00-10:20</td>
<td>Presentation</td>
<td>D. Vaičiukynienė</td>
<td>Zeolitized bottom ashes from biomass combustion as cement replacing components</td>
</tr>
<tr>
<td>10:20-10:40</td>
<td>Presentation</td>
<td>E. Fidanchevksa</td>
<td>Optimization of the main process parameters of ceramics production from red mud and clay</td>
</tr>
<tr>
<td>10:40-11:00</td>
<td>Presentation</td>
<td>T. Kovacs &amp; Z. Sas</td>
<td>The NORM4BUILDING &amp; the By-BM databases</td>
</tr>
<tr>
<td>11:00-11:20</td>
<td>Coffee break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20-15:30</td>
<td><strong>Session 3: Measurement protocols for NORM and NORM containing construction materials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>CHAIR</strong> Harry Friedmann</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20-11:50</td>
<td>Key-note</td>
<td>P. De Felice</td>
<td>ENEA-INMRI contribution to MetroNORM project in the field of development of Reference Materials</td>
</tr>
<tr>
<td>11:50-12:20</td>
<td>Key-note</td>
<td>G. de With</td>
<td>A harmonised european norm for the determination of natural radioactivity in construction products</td>
</tr>
<tr>
<td>12:20-12:40</td>
<td>Presentation</td>
<td>B. Michalik</td>
<td>Measurement of radioactivity in building materials – problems encountered and commonly made mistakes</td>
</tr>
<tr>
<td>12:40-13:40</td>
<td>Lunch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:40-14:00</td>
<td>Presentation</td>
<td>M. Magnoni</td>
<td>Thoron exhalation rate in stony materials: a simplified approach</td>
</tr>
<tr>
<td>14:00-14:20</td>
<td>Presentation</td>
<td>F. Leonardi</td>
<td>Radon exhalation rate in building materials containing NORM residues via dynamic method: methods and protocol</td>
</tr>
<tr>
<td>14:20-14:40</td>
<td>Presentation</td>
<td>K. Kovler</td>
<td>Indoor radon control based on tabulated values of temporal radon variation</td>
</tr>
</tbody>
</table>
## Session 4: Assessing the impact of the use of NORM in construction

**CHAIR** Christian Kunze

### 9:00-9:30 Key-note

**P. Vuorinen**

Assessing ionizing radiation from construction products under Construction Product Regulation CPR — Dose assessment of emitted gamma radiation

### 9:30-10:00 Key-note

**O. Burcin**

IAEA perspective on the impact of the reuse of NORM

### 10:00-10:20 Presentation

**S. Pepin**

Using RESRAD-BUILD to assess the external dose from building material

### 10:20-10:40 Presentation

**T. Croymans**

Gamma exposure from building materials – a dose model with expanded gamma lines from NORs applicable in non-standard rooms

### 10:40-11:10 Coffee break

### 11:10-11:30 Presentation

**R. Wiegers**

The book of NORM4BUILDING: Industrial perspectives

### 11:30-11:50 Presentation

**N. Todorović**

Radiological impacts assessment for workers in ceramic industry

### 11:50-12:10 Presentation

**E. Toth-Bodrogi**

Immobilization of red mud into clay matrix

### 12:10-12:30 Presentation

**S. Friedreich**

From NORM residues to building materials – Legislation & practice

### 12:30-13:30 Lunch

### 13:30-16:00 Session 5: Round table in 4 working groups

- **WG 5.1** EU NORM Associations
- **WG 5.2** Communication, perception and terminology
- **WG 5.3** Pretreatment of NORM residues
- **WG 5.4** Standardized assessments of construction products

**Visit of archeological site and social dinner**
Coffee break

Session 6: Future perspectives of the COST Action NORM4BUILDING
CHAIR Wouter Schroeyers
General discussion with participation of audience

POSTERS

External Dose Assessment from NORM in Building Materials
Yoon Hae Cho, Seung Woo Ji, Jung Hwan Jang, Jae Kook Lee, Kwang Pyo Kim

Biomass ashes characterization and radiological behaviour
M. Martín-Morales, M.M. Alonso, S. Gismera, C. Gascó, J.A. Suárez, M. Zamorano, F. Puertas

Foam ceramic from romanian coal-firing power stations ash processed in microwaves field
Enikő Volceanov, Adrian Volceanov, Simona Badea

Radiological aspects for use of woodchips ashes in building industry
Massimo Garavaglia, Silvia Bucci, Elena Caldognetto, Marco Cappio Borlino, Massimo Faure Ragani, Concettina Giovani, Mauro Magnoni, Cristina Nuccetelli, Ilaria Peroni, Rosella Rusconi, Flavio Trotti, Luca Verdi

Energy Spectrum Distribution of Photon Radiations for U Series and Th Series in Secular Equilibrium
Jaekook Lee, Kunwoo Cho, Kwang Pyo Kim

A nationwide study to identify NORM-related industries: results and recommendations
T. Vaasma, M. Kiisk, S. Suursoo, A.H. Tkaczyk

Control of radon emanation at determining the activity concentration index of NORM
A. Tsapalov, K. Kovler

Assessment of natural radactivity from building materials in Spain
M. Pérez, R. Ruiz-Cruces, C. Dueñas, E. Liger, E. Gordo, M. Cabello S. Cañete

Reuse of NORM for Eseretic Energy Manipulation
I. Prlic, M. Suric Mihic, Z. Veinović, A. Mostecak, M. Justic

Physical and chemical characterization of building materials
M. Pérez, L. León Reina, R. González, R. Ruiz-Cruces, C. Dueñas, E. Liger, E. Gordo, S. Cañete

ENEA-INMRI contribution to MetroNORM project in the field of development of new Nuclear Data for the U series
L. Sperandio, M. Capogni, P. Carconi, P. De Felice, A. Fazio, A. Petrucci

NORM from building materials...and not just - Disposal and control issues
G. Zambelli, M. Taroni, F. Carnaccini, F. Cesarini, G. Gaggioli, A. Iannarone, A. Ciarmatori
General Information

Scientific Secretary
Carmela Carpentieri  ISS, Roma  + 39 06 4990 2872  carmela.carpentieri@iss.it
Antonella Morgia  ENEA, Roma  + 39 06 9400 5003  norm4building@airp-asso.it
Diana Olislagers  University of Hasselt, Belgium  + 32 11292177  cost@uhasselt.be

Technical Secretary
Monica Brocco  ISS, Roma  + 39 4990 6216  monica.brocco@iss.it

Organizing Committee
Cristina Nuccetelli  ISS, Italy
Carmela Carpentieri  ISS, Italy
Rosabianca Trevisi  INAIL, Italy
Federica Leonardi  INAIL, Italy

Scientific Committee
Wouter Schroeyers  University of Hasselt, Belgium
Cristina Nuccetelli  ISS, Italy
Pierino De Felice  INMRI-ENEA, Italy
Konstantin Kovler  Technion University, Israel
Christian Kunze  EAN-NORM
Mauro Magnoni  ARPA Piemonte, Italy
Joseph Maringen  BEV, Austria
Stephane Pepin  FANC, Belgium
Rosabianca Trevisi  INAIL, Italy

Venue:
Istituto Superiore di Sanità, viale Regina Elena 299, Roma
ISS Main Entrance, Viale Regina Elena n. 299.

How to get to the Istituto Superiore di Sanità

- Airport "Leonardo da Vinci" (Fiumicino):
The airport is connected to Termini railway station by 30 minutes non stop trains, and to the Tiburtina railway station by 45 minutes trains.

- Airport "G.B. Pastine" (Ciampino):
A train connects the railway station of Ciampino with Termini railway station by 12 minutes.

- Termini railway station autobus:
about 20-25 minutes walk from the Institute or you can take either the bus: 492, 310

- Tiburtina railway station
about 15 minutes walk from the Institute or you can take either the bus: 71, 448, 492, 545

- Subway:
Line B (get off at the "Policlinico" stop) and about 10 minutes walk