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„ RADON IN THERMAL WATERS AND RADON RISK IN CHOSEN THERMAL WATER SPAS IN V4 COUNTRIES ”

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Visegrad Fund & SORC¹ Organization

Visegrad Group

The Visegrad Group or "Visegrad Four" also known as "V4" refers to the efforts of the four central European countries to cooperate on various topics of common interest within the all-European integration. The Czech Republic, Hungary, Poland and Slovakia are the four countries which they have common roots in diverse religious traditions and culture.

SORC Organization

The Social Organisation for Radioecological Cleanliness founded in 1993 to research on various topics such as environmental and related health promotion, educational, scientific and educational purposes.



¹Social Organisation for Radioecological Cleanliness

Objectives of the project

According to the topic of project “Radon in thermal waters and radon risk in chosen thermal water spas in V4 countries” each country has task to measuring Radon and it’s progenies, as well as the effective doses for employees, patients and visitors of spas

Refer to data background Hungary has been chosen three spas mention in below:

- ▶ Heviz Bath
- ▶ Eger Turkish Bath
- ▶ Igal Bath

The main aims followed by V4 Project

Health care and Protection

Intercomparison of methods and results

Exchange experience and knowledge between researchers







Instruments Provided by SORC

In order to measure Radon on air and compression with other type of detectors from other group, Hungary has provided 30 pieces of two difference type of passive detectors as NRPB and Raduet from Shinji for each group



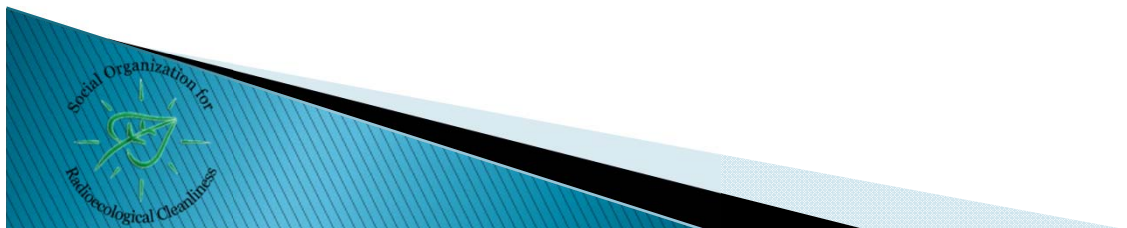
Measurement Methods

In order to measure Radon and Thoron and their progenies, attached and unattached fraction and EEC factor which are important parameter in dosimeter, listed instrument use in this project

- ▶ Passive Detectors  Radon and Thoron and progenies
 - NRPB
 - Radue
- ▶ Paylon AB-5  Radon In water
- ▶ Alphaguard PQ 2000 Pro  Radon in Air
- ▶ EQF 3220 Radon Monitor  Radon EEC , Attached and unattached

Pervious studies and data background

- ▶ C. Németh, S. Tokonami, J. Somlai, T. Kovács, N. Kávási, Z. Gorjánác, A. Várhegyi and J. Hakl Inaccuracies in assessing doses from radon in workplaces, International Congress Series 1276, 2005. 369–370
- ▶ Kavasi, Norbert; Kovacs, Tibor; Somlai, Janos; Jobbagy, Viktor, Nagy Katalin, Deak, Eszter, Berhes, Istvan, Bender, Tamas, Ishikawa, Tetsuo, Tokonami, Shinji COMPARISON OF URINARY EXCRETION OF RADON FROM THE HUMAN BODY BEFORE AND AFTER RADON BATH THERAPY RADIATION PROTECTION DOSIMETRY 2011, 146, 27–30
- ▶ Viktor Jobbágy, Norbert Kávási, János Somlai, Péter Dombóvári, Richárd Kardos, Tibor Kovács Radioanalytical investigations of uranium concentrations in natural spring, mineral, spa and drinking waters in Hungary Journal of Radioanalytical Nuclear Chemistry 2010, 286(2), 417–422
- ▶ Katalin Nagy, István Berhész, Tibor Kovács, Norbert Kávási, János Somlai, Tamás Bender Does balneotherapy with low radon concentration in water influence the endocrine system? A controlled non-randomized pilot study Radiation and Environmental Biophysics 2009, 48, 311–315,
- ▶ Katalin Nagy, Norbert Kávási, Tibor Kovács, János Somlai: Radon therapy and speleotherapy in Hungary, La Presse Thermale et Climatique, 145, (2008), 219–226.



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