

INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU FIZICA SI
INGINERIE NUCLEARA HORIA HULUBEI (HORIA HULUBEI NATIONAL
INSTITUTE FOR R&D IN PHYSICS AND NUCLEAR ENGINEERING), IFIN - HH,
BUCHAREST, ROMANIA

LIST OF PUBLICATIONS
2007 – 2011

a). Articles published in International Journals, Thomson Reuters (ISI), Philadelphia, USA, Quoted

1. M. Sahagia, A. Luca, A. C. Wätjen, A. Antohe, C. Ivan, C. Varlam, I. Faurescu, P. Cassette. *Establishment of the ^{222}Rn traceability chain with the Romanian Standard System*. Nuclear Instruments and Methods A 631 (2011) 73-79
2. D. Stanga, F.J. Maringer, E. Ionescu. *A new method for determining the efficiency of large-area beta sources constructed from anodized aluminum foils*. Appl. Radiat. Isotopes 69 (2011) 227–230.
3. B.Chauvenet, M-M.Be, M-N.Amiot, C.Bobin, M-C.Lepy, T.Branger, I.Laniece, A.Luca, M.Sahagia, A.C.Watjen, K.Kossert, O.Ott, O.Nahle, P.Dryak, J.Sochorova, P.Kovar, P.Auerbach, T.Altizoglou, S.Pomme, G.Sibbens, R.Van Ammel, J. Paepen, A. Iwahara, J.V.Delgado, R. Poledna, C.J. da Silva, L. Johansson, A. Stroak, C. Bailat, Y. Nedjadi, P.Spring. *International exercise on Sb-124 activity measurement* . Appl. Rad. Isotopes. 68(2010)1207-1210
4. A.Luca, A.C.Wätjen, E.L.Grigorescu, M.Sahagia, C.Ivan. *Conclusions from the Participation at Proficiency Tests for Gamma-Ray Spectrometry Measurements*. Romanian Journal of Physics, ISSN 1221-146X, Vol 55, 7-8 (2010) 724-732.
5. M.Sahagia, A.C.Wätjen, A.Luca, C.Ivan. *IFIN-HH ionization chamber calibration and its validation; electrometric system improvement* Appl. Radiat.Isot. 68(2010) 1266 – 1269
- 6 .A.Luca. *Evaluation of Th-234 nuclear decay data*. Appl.Radiat.Isot.68(2010)1591-1594
- 7 . M-M.Be, B.Chauvenet, M-N.Amiot, C.Bobin, M-C Lepy, T.Branger, I.Laniece, A.Luca, M.Sahagia, A.C.Watjen, K.Kossert, O.Ott, O.Nahle, P.Dryak, J.Sochorova, P.Kovar, P.Auerbach, T.Altizoglou, S.Pomme, G.Sibbens, V.Van Ammel, J.Paepen, A.Iwahara, J.U.Delgado, R.Poledna. *International exercise on Sb-124 photon emission determination*. Appl. Radiat. Isotopes, 68,10 (2010) 2026-2030
8. M. Sahagia, A. Cristina Wätjen, A.Luca, C.Ivan, A.Antohe. *National and International Comparisons on Radiopharmaceuticals' activity measurement*. Rom. J. Phys.Vol 55, 7-8 (2010) 733-740
9. V. Olsovcova, A. Iwahara, P. Oropesa, L. Joseph, A. Ravindra, M.Ghafoori, H-K Son, M. Sahagia, S.Tastan, B. Zimmerman. *National Comparisons of I-131 measurement among nuclear medicine clinics of eight countries*. Appl. Radiat.Isotopes 68(2010)1371 - 1377
10. C. Ivan, A. C. Wätjen, P. Cassette, M. Sahagia, A. Antohe, E.L. Grigorescu. *Participation in the CCRI(II)-K2.H-3 comparison and study of the new TDCR-LS counter with 6 CPMs*. Appl. Radiat. Isotopes. 68(2010)1543-1545
11. M.Sahagia, D.Stanga, A.C.Wätjen, A.Luca, P.Cassette, C.Ivan, A.Antohe . *The Rn-222 standard system established at IFIN-HH, Romania*. Appl.Radiat.Isot. 68 (2010) 1503 -150
- 12.D. Stanga, D. Radu, O. Sima .*A new model calculation of the peak efficiency for HPGe detectors used in assays of radioactive waste drums*. Appl. Radiat. Isot. 68, 7-8 (2010)1418-1422
- 13.D. Radu, D. Stanga, O. Sima. *Transfer of detector efficiency calibration from a point source to other geometries using ETNA software*. Rom. Rep. in Physics, 62(2010) 57-64.

- 14 D. Abriola, M. Bostan, S. Erturk, M. Fadil, M. Galan, S. Juutinen, T. Kibédi, F. Kondev, A. Luca, Al. Negret, N. Nica, B. Pfeiffer, B. Singh, A. Sonzogni, J. Timar, J. Tuli, T. Venkova, K. Zuber. *Nuclear Data Sheets for A=84* Nuclear Data Sheets 110 (2009), 2815-2944.
15. B.E. Zimmerman, T. Altitzoglou, D. Rodrigues, R. Broda, P. Cassette, L. Mo, G. Ratel, B. Simpson, W. van Wyngaardt, C. Watjen. *Comparison of triple-to-double coincidence ratio (TDCR) efficiency calculations and uncertainty assessment for ^{99}Tc* . Appl. Radiat. Isot. 68(2010)1477-1481
16. A. Luca, R. Margineanu, M. Sahagia, A.C. Razdolescu. *Activity measurements of technically enhanced naturally occurring radionuclides TENORM in phosphogypsum*. Appl. Radiat. Isot., Vol. 67 (2009) 961-963
17. D. Stanga, P. De Felice. *Improvements in the absolute standardization of large-area reference sources*. Appl. Radiat. Isot. 67, 9(2009)1716-1720
18. D. Radu, D. Stanga, O. Sima. *ETNA software used for efficiency transfer from a point source to other geometries*. Appl. Radiat. Isot. 67, 9 (2009)1686-1690
19. D. Radu, D. Stanga, O. Sima. *A method of efficiency calibration for disk sources in gamma-ray Spectrometry*. Romanian Reports in Physics, ISSN 1221-1451 43 822 Vol 61, 2(2009)203-213.
20. A. Stochioiu, M. Sahagia, S. Bercea, C. Ivan, I. Tudor. *Monitoring of the radioactivity concentration of air in the area of the IFIN-HH, Romania*. Rom. Rep. in Physics, Vol. 61, 3(2009)581-586
21. M. Sahagia, A.C. Watjen, C. Ivan. *Progress in organizing national and international comparisons for nuclear medicine measurements*. Rom. J. Phys. 54,7-8 (2009) 619-627
22. A. Stochioiu, M. Sahagia, I. Tudor. *TLD system for monitoring of the environmental radioactivity*. Rom. J. Phys. 54,7-8 (2009)711-719
23. C. Ivan, P. Cassette, M. Sahagia. *A new TDCR-LS counter using channel photomultiplier tubes*. Appl. Radiat. Isot. 66, 6-7(2008) 1006 -1011
24. M. Sahagia, A.C. Razdolescu, C. Ivan, A. Luca. *Assurance of the traceability chain for I-131 measurements*. App. Radiat. Isot. 66, 4(2008)539-544
25. M. Sahagia, C. Ivan, E.L. Grigorescu, A.C. Razdolescu. *Standardization of I-125 by the coincidence method and practical applications*. Appl. Radiat. Isot. 66, 6-7(2008)895-899
26. A.C. Razdolescu, P. Cassette, M. Sahagia. *Measurements of a Fe-55 solution activity by LSC-TDCR method*. Appl. Radiat. Isot. 66, 6-7(2008)750-755
27. A. Luca. *Experimental determination of the uranium enrichment*. Rom. J. Phys. Vol. 53.1-2(2008)35-40
28. A. Stochioiu, M. Sahagia, S. Bercea, F. Mihai, I. Tudor. *Use of passive dosimeters for the mapping of the radiation level in areas involved in work with radioactive sources*. Rom. J. Phys. Vol. 53, 7-8(2008)801-807
29. E.L. Grigorescu, M. Sahagia, A.C. Razdolescu, A. Luca, C. Ivan. *Standardization of large area alpha and beta sources with a window-less multi-wire proportional counter*. Rom. Rep. in Phys. Vol. 60, no.3 (2008)909-916
30. M. Sahagia, A.C. Razdolescu. *Quality assurance in nuclear medicine radioactivity measurements*. Rom. Rep. in Phys. Vol. 59, 4(2007)1119-1126
31. M. Sahagia, A.C. Razdolescu, E.L. Grigorescu, A. Luca, C. Ivan. *The collaboration of the Radionuclide Metrology Laboratory from IFIN-HH, owner of the primary activity standard, with units involved in nuclear energy field*. Rom. Rep. in Phys. 59, 3 (2007)787-793

Other Romanian Journals

1. M. Sahagia, A. Luca, A.C. Watjen, A. Antohe, C. Ivan, D. Stanga, C. Varlam, I. Faurescu, L. Toro, M. Noditi, Ph. Cassette. *The primary Romanian radon standard, a common project:*

IFIN-HH, Bucharest; ICSI, Rm.Valcea; ISP, Timisoara; CEA/LNE-LNHB, Saclay (France). Progress of Cryogenics and Isotopes Separation 63,1 (2010)113-129. ISBN: 978-973-750-192-9

2. M. Sahagia, A. Luca, A. Antohe, C. Ivan. *Role of the radionuclide metrology in quality assurance of the environmental physics measurements*. Journal of Science and Arts, nr.2, 2011 (in press). ISSN 1844-9581; eISSN 2068-3049

3. A. Antohe, B. Neacsu, A. Stochioiu, A. Luca, M. Sahagia. *Methods for the realization of radioactive standards and environmental radioactivity measurement*. Journal of Science and Arts, no.2, 2011(in press).ISSN 1844-9581;eISSN 2068-3049

**b) Papers presented at International Conferences, Workshops
-18-th International Conference on Radionuclide Metrology and its Applications,
ICRM2011, Tsukuba, Japan, September 19-23, 2011**

Submitted abstracts:

1. M. Sahagia, A. Luca, A. Antohe, C. Ivan. *Standardization of ^{64}Cu and ^{68}Ga by the $4\pi\text{PC-}\gamma$ coincidence method and calibration of the ionization chamber*

2. A. Luca, M. Sahagia, A. Antohe. *Measurements of ^{64}Cu and ^{68}Ga half-lives and gamma-ray emission intensities*

3. A. Luca, M.-C. Lépy. *Measurements of relative photon emission intensities and nuclear decay data of Sn-113*

4. D.Stanga. *Numerical modeling of large-area beta sources constructed from anodized-aluminium foils*

5. D. Stanga, T. Craciunescu. *Uncertainty assessment in gamma-spectroscopy assay*

6. D. Stanga, D. Gurau. *A new approach in gamma-ray scanning of rotating drums containing radioactive waste*

- 3-rd International Proficiency Testing Conference, Iasi, Romania, September 28-30, 2011

Submitted abstracts:

1.M.Sahagia, A.Antohe, A. Luca. *Results of a proficiency test on the measurement of volume radioactive sources from the mixture: ^{134}Cs and ^{137}Cs*

2. A.Luca, M. Sahagia, A. Antohe, C. Şulea, R. Berenştain. *Recent participations of the Radionuclide Metrology Laboratory from IFIN-HH to proficiency tests and interlaboratory comparisons*.

- LSC 2010, Advances in Liquid Scintillation Spectrometry, Conference, Paris, France, September 6-10, 2010

1.A.Antohe, M. Sahagia, A.Luca, Ph. Cassette, C.Ivan. *Influence of detection efficiency on the measurement of radon by liquid scintillation counting*. P-76. Submitted to Radiocarbon

- Third European IRPA Congress, Helsinki, Finland, 14-18 June 2010

1. M.Sahagia, A.Luca, A.C.Watjen, A.Antohe, C.Ivan, D.Stanga, C.Varlam, I.Faurescu, L.Toro, M.Noditi, P.Cassette. *Results obtained in the measurement of Rn-222 with the Romanian standard system*. P-03-16. Proc. ISBN 978-952-478-549 (print); -550 (pdf). Edita Prima OY, Helsinki, 2010

2. S.Bercea, C.Cenusa, A.Celarel, M.Sahagia, A.Stochioiu, I.Tudor, C.Ivan. *An extrapolation ionization chamber for alpha-rays detection and measurement*. P-12-28. Proc. ISBN 978-952-478-549 (print); -550 (pdf). Edita Prima OY, Helsinki, 2010

3. A.Stochioiu, S.Bercea, M.Sahagia, C.Ivan, I.Tudor, A.Celarel, *The measurement of the natural radiation background in a salt mine*.P-17-05 Proc. ISBN 978-952-478-549 (print); -550 (pdf). Edita Prima OY, Helsinki, 2010

-Workshop DDEP 2010: Training sessions of the Decay Data Evaluation Project, Madrid, Spain, 9-11 June 2010

1. A. Luca, *Evaluation of Ra-228 nuclear decay data.*
2. A. Luca, *Sn-113, measurement of gamma ray emissions and data evaluation*
3. V. Chiste and A. Luca, *How to handle incomplete decay scheme*

- International Conference on Nuclear Data for Science and Technology (ND 2010), Jeju Island, Korea, April 26-30, 2010

1. M.A. Kellett, M.-M. Bé, V. Chechev, Huang Xiaolong, F.G. Kondev, A. Luca, G. Mukherjee, A.L. Nichols, A. Pearce. *New IAEA Actinide Decay Data Library.*

- 5th International Conference on Radionuclide Metrology Low- Level –Radioactivity Measurement Techniques, ICRM-LLRMT'08, PTB-Braunschweig, Germany, September 22-26, 2008

1. A. Luca. *The minimum detectable activity – A false friend of the low-level gamma-ray spectrometrist ?* ID 071

-CIPM- CCRI(II), WORKSHOP II, Activity uncertainties and comparisons, BIPM, Sevres, September 17-18, 2008

1. M.Sahagia, A.C.Wätjen. *Re-evaluation of IFIN-HH data and uncertainties for I-125.* WORKSHOPII/08-16
2. C.Wätjen, P.Cassette, M.Sahagia. *Uncertainties associated with the activity measurement of Fe-55 by LSC-TDCR.* WORKSHOPII/08-20

- IRPA12 Congress, Buenos Aires, Argentina, October 19-24, 2008

1. M. Sahagia, D. Stanga, A. C. Wätjen, A.Luca, L.Toro, C.Varlam, P.Cassette. *Concept for a primary Romanian radon standard,* Proc. TSIII 4.4 ID2398

- 2nd Workshop for Radioactive Decay Data Evaluators: Training sessions of the Decay Data Evaluation Project (DDEP2008), Bucharest, Romania, May 12-14, 2008

1. A. Luca. *Evaluation of ²³⁶U Nuclear Decay Data.* CD –ROM containing all papers presented, distributed to the participants
2. M. Sahagia. *Main Research Area and International Activities of the Radionuclide Metrology Laboratory from IFIN-HH.* CD –ROM distributed to the participants

- Radionuclides in food workshop. Certified reference, intercomparisons, performance evaluation and emergency preparedness exercise material, NIST, Gaithersburgh, USA, August 26-29, 2008

- 1.A.C.Wätjen, M.Sahagia, A.Luca, A.Antohe. *Existing experience and new developments in certified reference materials for radionuclides in food measurements*

-Simposio de Metrologia 2008, Mexico City, Mexico, October 2008

1. S.Bercea, M.Sahagia, A.Celarel, C.Wätje. *Ionizing radiations metrology laboratory from IFIN-HH, Romania,* presentation. Proc. ID1411

-Radioisotopes and Biomolecules - Early Diagnosis and Targeted Radiotherapy of Cancer Workshop, Bucharest, Romania, November 26 - 28, 2008

- 1.M.Sahagia, A.C. Wätjen, E.L.Grigorescu, A.Luca, C.Ivan, A.Antohe. *Standardization of the therapeutical radionuclides. Paper O-1,* CD-ROM

-1st International Proficiency Testing Conference, Sinaia, Romania, October 11-13, 2007

1. M.Sahagia, A.C.Razdolescu, E.L.Grigorescu, A.Luca, C.Ivan. *From international equivalence to national traceability in radionuclide metrology,* Proc. Vol. pp 253-261, ISBN 978-973-8132-65-8

- “NUCLEAR PT” Nuclear Proficiency Testing in Applications of Nuclear Techniques, Workshop, Bucharest, Romania, October 6-9, 2007

1. M. Woods, M.Sahagia. *The International Framework for Maintaining Equivalence and Traceability in Radionuclide Metrology.* AIP, Proc. 1036, 2008, pp.5-11, ISBN 978-0-7354-

0560-8

2. M.Sahagia, M.Woods. *The National Dissemination of International measurements*. AIP, Proc. 1036, 2008, pp.12-25, ISBN 978-0-7354-0560-8

- **IRPA Regional Congress for Central and Eastern Europe, Brasov, Romania, 24-28 September, 2007**

1. A.Luca. *Evaluation of Nuclear Data and its Importance in Some Dose Rate Computations*, CD-ROM, paper T5, P-11.

2. A.Luca, A.Pantelica, L.Dinescu, E.Neacsu, I.Companis, M.Dragusin, S.Badea. *Assessment of the Radioactivity Levels in Soil Around VVR-S Nuclear Reactor of IFIN-HH by Gamma-Ray Spectrometry.*, paper T11, P-3.

3. E. L. Grigorescu, *Efficiency uncertainties in gamma spectrometry*. paper T5, O-3

4. E. Neacsu, A. Luca, C. Mustata, *Aspects related to spent nuclear fuel wet storage management: the water chemistry*, paper T10, P-7.

- **Underground laboratories and measurement of low level activities – Workshop, Bucharest and Slanic-Prahova, Romania, April 25-27, 2007**

1. A. Luca, M. Sahagia, A.C. Razdolescu. *Low Level Activity Measurements by using Gamma-ray Spectrometry, in the frame of the IAEA-CU-2006-09-CCRI (II)-S4 Supplementary Comparison*. CD-ROM, distributed to the participants

c) International Reports

1. M.-M. Bé, V. Chisté, C. Dulieu, X. Mougeot, E. Browne, V. Chechev, N. Kuzmenko, F. Kondev, A. Luca, M. Galán, A. Arinc, X. Huang. **“Monographie BIPM-5: Table of Radionuclides (Vol. 5 – A=22 to 244)”**, Ed. Bureau International des Poids et Mesures, Pavillon de Breteuil, F-92310 Sèvres, France, 2010, ISBN-13 978-92-822-2234-8.

2. M.-M. Bé et al., **“Monographie BIPM-5: Table of Radionuclides (Comments on evaluation)”**, Vol. 1-5, Ed. BIPM, Sevrès, France, 2010

3. C.Michotte, S.Courte, G.Ratel, M.Sahagia, A.C.Watjen, F.Fitzgerald, F-J. Maringer *Update of the ongoing comparison BIPM.RI(II)-K1.Co-60 including activity measurements of the radionuclide Co-60 for the IFIN-HH (Romania), NIST (USA) and the BEV (Austria)* Metrologia Technical Supplement 47(2010) 06010.

4. M-M Bé, B. Chauvenet, M.-N. Amiot, C. Bobin, M.-C. Lépy, T. Branger, I. Lanièce; A. Luca, M. Sahagia, A.C. Wätjen; K. Kossert, O. Ott, O. Nähle; P. Dryak, J. Sochorová, P. Kovar, P. Auerbach; T. Altzitzoglou, S. Pommé, G. Sibbens, R. Van Ammel, J. Paepen; A. Iwahara, J.U. Delgado, R.Poledna; L. Johansson, A. Stroak; C. Bailat, Y. Nedjadi, P. String. ¹²⁴Sb. *Activity measurement and determination of photon emission intensities*, Rapport CEA-R-6222, CEA-Saclay, France, 2009, ISSN 0429-3460.

5. Bé M.-M., Chisté V., Dulieu C., Browne E., Chechev V., Kuzmenko N., Kondev F., Luca A., Galán M., Pearce A., Huang X. **“Monographie BIPM-5: Table of Radionuclides (Vol. 4 – A = 133 to 252)”**, 2008, ISBN 92-822-2230-6.

6. G.Ratel (BIPM),C.Michotte (BIPM), M.Sahagia (IFIN-HH), A.Yonuki (NMIJ.)

Update of the BIPM comparison BIPM.RI(II)-K1.Ba-133 of activity measurements of the radionuclide ¹³³Ba to include the results of the IFIN-HH (Romania) and the NMIJ (Japan). Metrologia,2008, 45, Tech. Suppl, 06002

7.G. Ratel, C. Michotte, M. Sahagia, T.S. Park, P. Dryak, J. Sochorova, F. Maringer and M. Kreuziger. *Results of the IFIN-HH (Romania), KRISS (Republic of Korea), CMI (Czech Republic) and BEV (Austria) in the BIPM comparison BIPM.RI(II)-K1.I-131 of activity measurements of the radionuclide I-131*

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8. G.Ratel (BIPM), C.Michotte (BIPM), J.Leena (BARC), A. Iglicki (CNEA), M.Sahagia (IFIN-HH), Y.Hino (NMIJ-Japan) .*Update of the BIPM comparison BIPM.RI(II)-K1.Cs-*

134 of activity measurements of the radionuclide ^{134}Cs to include the 2005 results of the BARC (India) and the CNEA (Argentina), the 2006 results of the IFIN (Romania). Metrologia 44(2007)Tech.Suppl. 06004