

## Dr. Rüdiger Kessel

Dr. Rüdiger Kessel is the the founder and managing director of Metrodata GmbH and the developer of the application packages GUM Workbench, GUMCAD and the Open Monte Carlo Engine (OMCE).

Dr. Kessel worked as a scientist at the Institute for Reference Materials and Measurements (IRMM), at the National Institute for Standards and Technology (NIST) and at the National Metrology Institute of Germany (PTB).

Dr. Kessel holds a degree as Doctor of Science from the University of Antwerps (UA), Belgium.



## Teaching and Education Activities

- Technical Cooperation: Workshops on Measurement Uncertainty in Vietnam, Kyrgyzstan and India
- Nuclear Safeguards Laboratories: Workshops on Measurement Uncertainty at the International Atomic Energy Agency (IAEA), in USA, in Brasil and in Japan.
- Calibration Laboratories: Workshops on Measurement Uncertainty in Germany, Austria, Switzerland and USA.

## Scientific Committees

- GMA VDI Technical Committee 1.11 Measurement Uncertainty
- IUPAC Commission on Isotopic Abundances and Atomic Weights

## Selected Publications

- [01] Rüdiger Kessel, Michael Berglund, Philip Taylor and Roger Wellum: How to treat correlation in the uncertainty budget when combining results from different measurements, AMCTM V 2000, Page 232, Published on: P.Ciarlini, M.G.Cox, E.Filipe, F.PAVESE and D.Richter (eds.): "Advanced Mathematical Tools in Metrology, vol. 5", Series on Advances in Mathematics for Applied Sciences vol. 57, World Scientific, Singapore, 2001.
- [02] Paul De Bièvre, Staf Valkiers, Rüdiger Kessel, Philip D. P. Taylor, Peter Becker, H. Bettin, Anna Peuto, Savino Pettorruso, K. Fujii, A. Waseda, M. Tanaka, R. D. Deslattes, H. S. Peiser, and M. J. Kenny: A Reassessment of the Molar Volume of Silicon and of the Avogadro Constant, IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, VOL. 50, NO. 2, APRIL 2001 593.
- [03] Solveig Linko, Ulf Örnemark, Rüdiger Kessel, Philip D.P. Taylor: Evaluation of Uncertainty of Measurement in Routine Clinical Chemistry - Applications to Determination of the Substance Concentration of Calcium and Glucose in Serum, Clinical Chemical Laboratory Medicine, Walter de Gruyter, ISSN: 434-6621, Volume: 40, 04/2002 Page: 391 - 398.
- [04] Henrik Ramebäck, Michael Berglund, Rüdiger Kessel and Roger Wellum: Modelling isotope fractionation in thermal ionisation mass spectrometry filaments having diffusion controlled emission, International Journal of Mass Spectrometry, Volume 216, Issue 2, 1 May 2002, Pages 203-208.
- [05] Kenichi Fujii, Atsushi Waseda, Naoki Kuramoto, Shigeki Mizushima, Mitsuru Tanaka, Staf Valkiers, Philip Taylor, Rüdiger Kessel, and Paul De Bièvre: Evaluation of the Molar Volume of Silicon Crystals for a Determination of the Avogadro Constant, IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, VOL. 52, NO. 2, APRIL 2003.
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- [07] Rüdiger Kessel, Raghu Kacker, Michael Berglund: Coefficient of contribution to the combined standard uncertainty, Metrologia 43, August 2006, Page 189-195.
- [08] Stefan Heidenblut, Rüdiger Kessel, Klaus-Dieter Sommer, Albert Weckenmann: Ein Modellbildungskonzept

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- [09] Raghu Kacker, Klaus-Dieter Sommer, Rüdiger Kessel: Evolution of modern approaches to express uncertainty in measurement, *Metrologia*, Vol. 44, No. 6. (December 2007), 513.
- [10] Rüdiger Kessel, Michael Berglund, Roger Wellum: Application of consistency checking to evaluation of uncertainty in multiple replicate measurements, *Accreditation and Quality Assurance*, DOI 10.1007/s00769-008-0382-x, 2008.
- [11] Roger Wellum, Andre Verbruggen, Rüdiger Kessel: A new evaluation of the half-life of Pu, *J. Anal. At. Spectrom.*, DOI:10.1039/B819584F, 2009.
- [12] Raghu Kacker, Rüdiger Kessel, Klaus-Dieter Sommer: Assessing differences between results determined according to the Guide to the Expression of Uncertainty in Measurement, *NIST Journal of Research*, 2010.
- [13] Rüdiger Kessel: Open Monte Carlo Engine User Manual, NIST Interagency/Internal Report (NISTIR) 7739, 2010.
- [14] Raghu Kacker, Rüdiger Kessel, Klaus-Dieter Sommer: Uncertainty Budgeting for Range Calibration, *Measurement Systems and Process Improvement (MSPI) 2010*.
- [15] Raju Datla, Rüdiger Kessel, Allan Smith, Raghu Kacker, D. B. Pollock: Uncertainty Analysis of Remote Sensing Optical Sensor Data Guiding Principles to Achieve Metrological Consistency, *International Journal of Remote Sensing*, pp. 867 - 880, 2010.
- [16] Rüdiger Kessel and Tim Hewison, "Common Reference Channels for Metrological Comparability," *Global Space-based Inter-Calibration Systems Quarterly 4 (2010)*, pp. 1-2.
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