



Gamma-ray Spectrometry

Training Workshop on Applications of Gamma-ray Spectrometry to Environmental Samples

EFFTRAN

Tim Vidmar, PhD

SCK.CEN, Belgian Nuclear Research Centre, Boeretang 200, Mol, Belgium

Tim.Vidmar@sckcen.be

E&I, Belgrade, Serbia

<1>

Copyright notice

Slides 3 to end are the intellectual property of Dr. Tim Vidmar from the SCK.CEN, Belgian Nuclear Research Centre.

"Unauthorised reproduction constitutes a copyright infringement and may lead to prosecution or civil proceedings."

<2>

EFFTRAN Characteristics

- Offers Efficiency Transfer and Coincidence Correction computation
- XCOM material data file
- Limited to coaxial detectors
- Limited to cylindrical samples (including planar detectors and point sources)
- No instructions for use currently provided

<3>

EFFTRAN Characteristics

- Short run time, easy installation
- Virtual total efficiency calculated with Monte Carlo integration of interaction probabilities
- User interface in Excel, using VBA
- Export and import of efficiencies and coincidence corrections from Canberra's GENIE platform
- Successfully tested against measurements of calibrated standards, other Efficiency Transfer codes and GESPECOR
- Participation in an international inter-comparison of codes for calculation of coincidence summing corrections

<4>

EFFTRAN Characteristics

- Can be used in a non-interactive mode – user extendable
- Available completely free of charge – free software
- All source files included
- Has been adopted for routine use at the SCK•CEN – good results
- Downloaded by about 20-30 different groups and individuals
- To get a copy, contact the author at Tim.Vidmar@gmail.com

<5>

References

Vidmar, T., 2005. EFFTRAN - a Monte Carlo efficiency transfer code for gamma-ray spectrometry. Nuclear Instruments and Methods A 550, 603-608.

Vidmar, T., et al., 2010. Testing efficiency transfer codes for equivalence. Applied Radiation and Isotopes 68, 355-359.

Vidmar, T., Kanisch, G., Vidmar, G., 2011. Calculation of true coincidence summing corrections for extended sources with EFFTRAN. Applied Radiation and Isotopes 69, 908-911.

<6>