NKS GammaUser 2014

EFFTRAN Validation I

Tim Vidmar

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

Tim.Vidmar@sckcen.be

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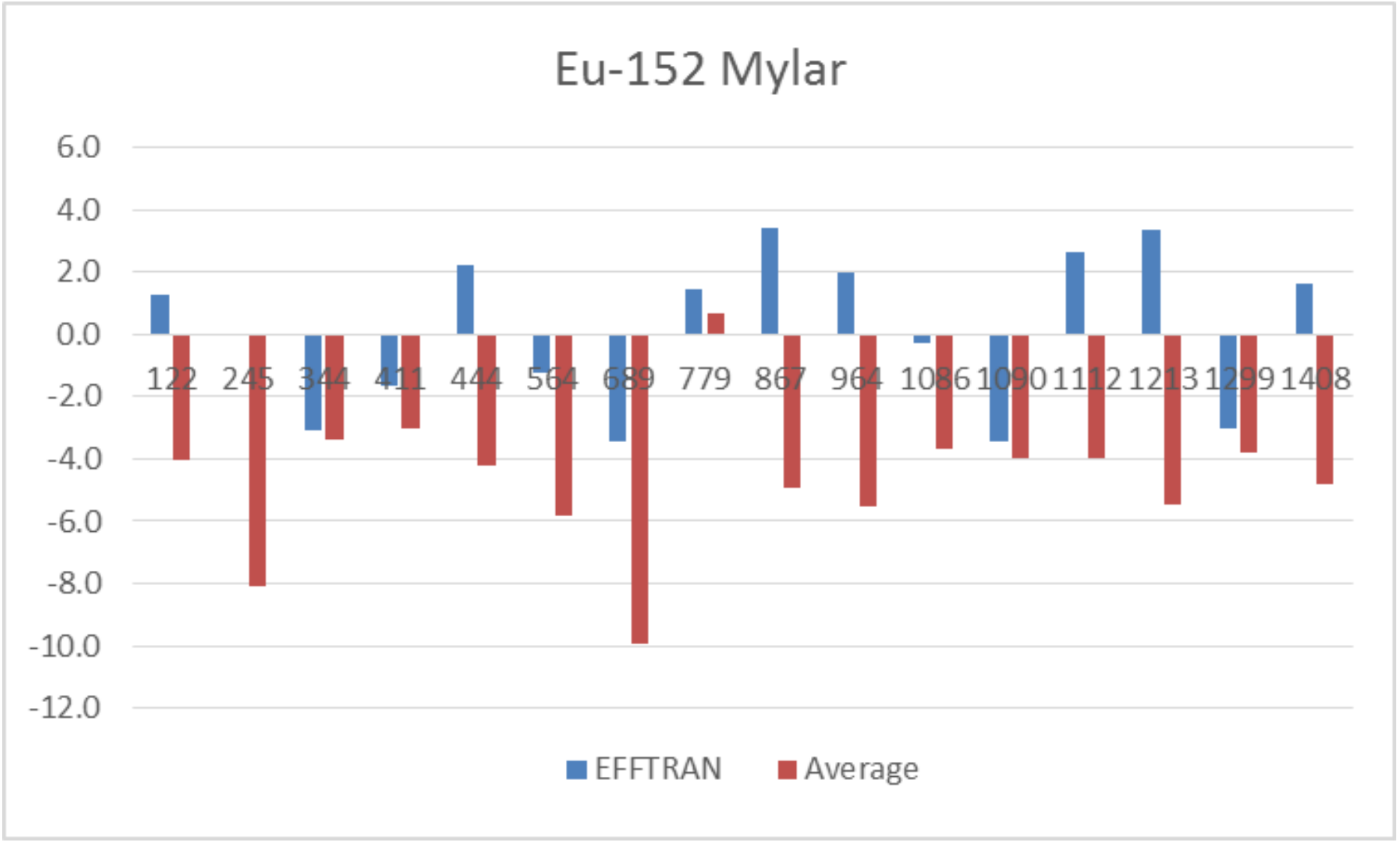
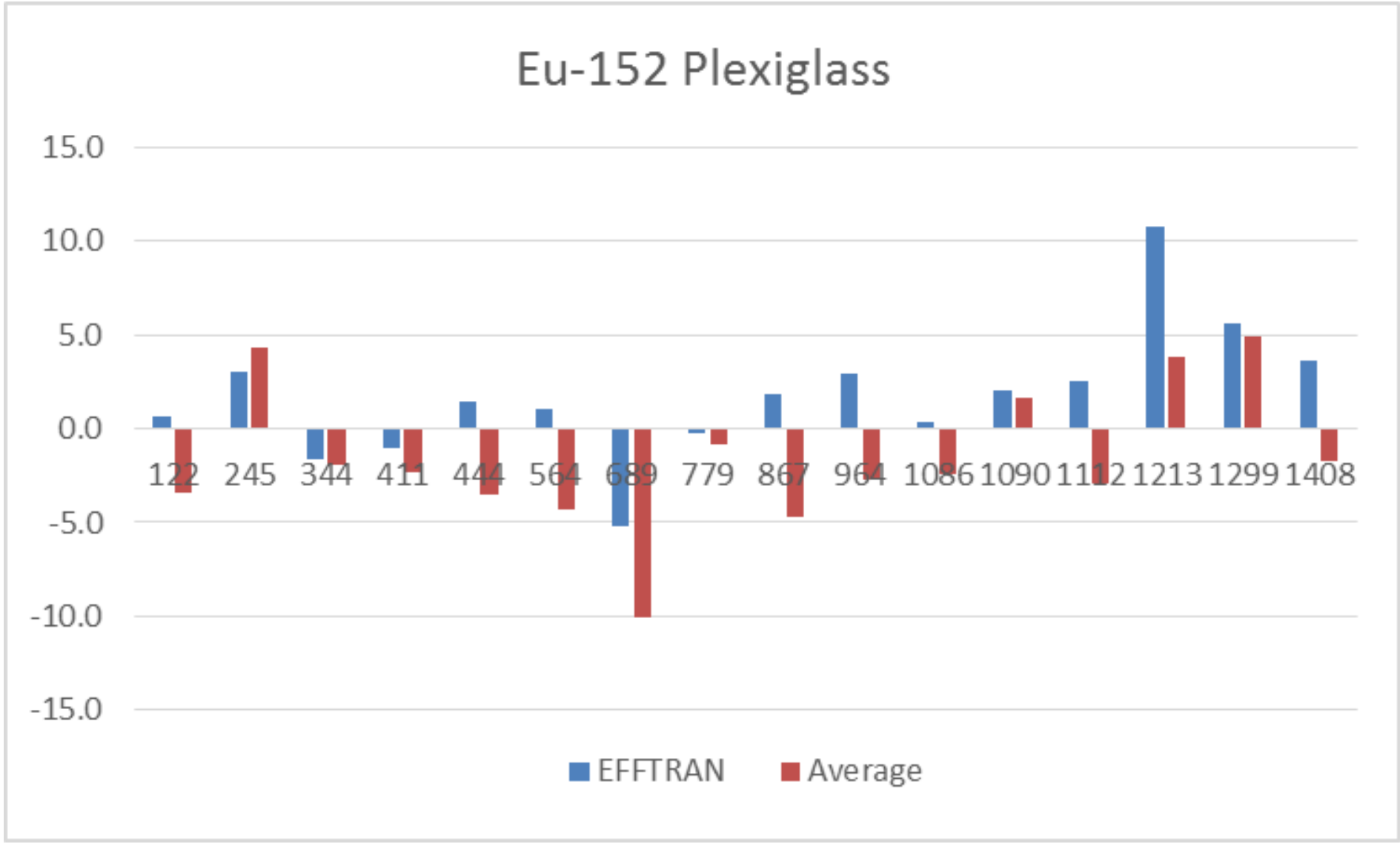
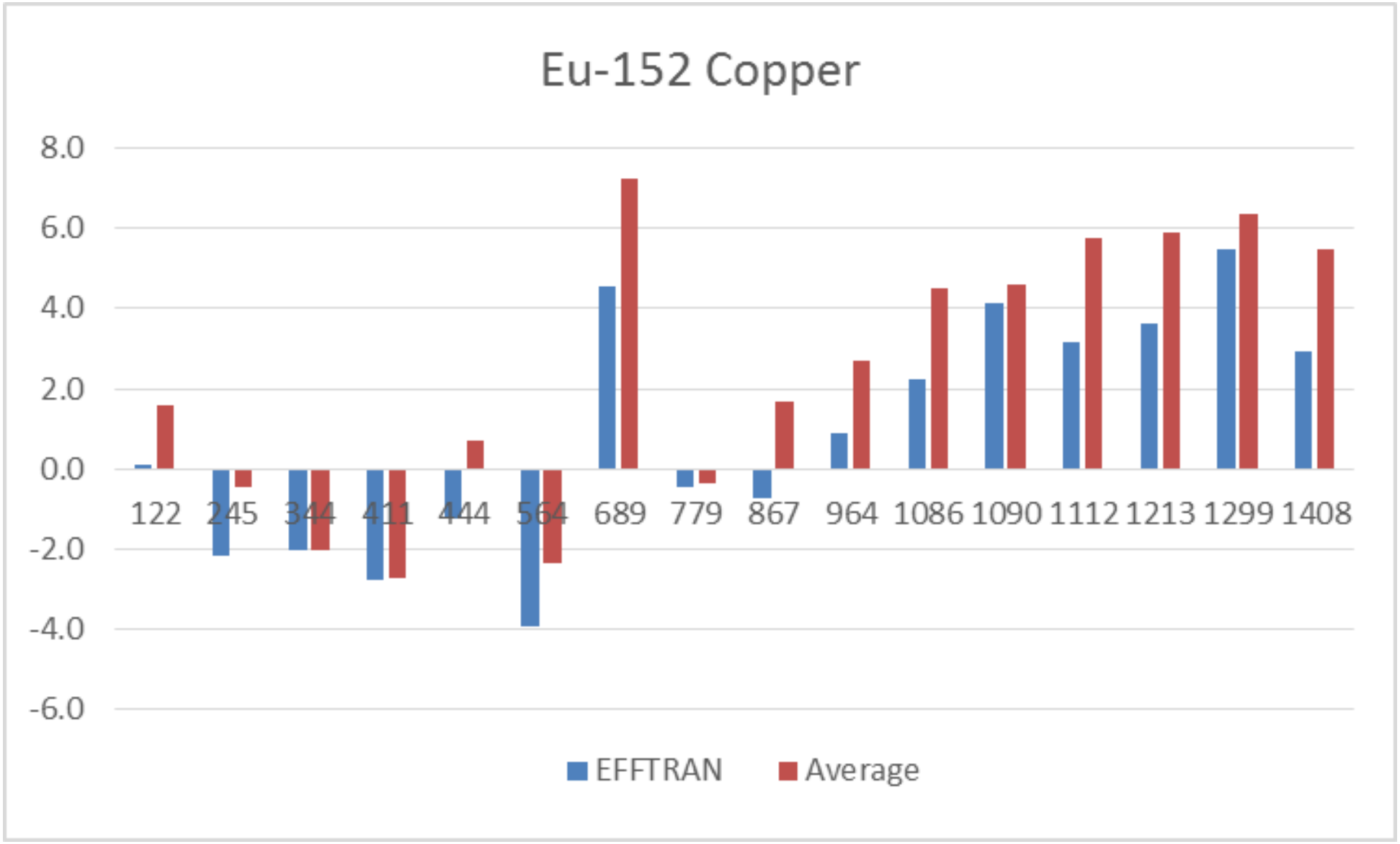
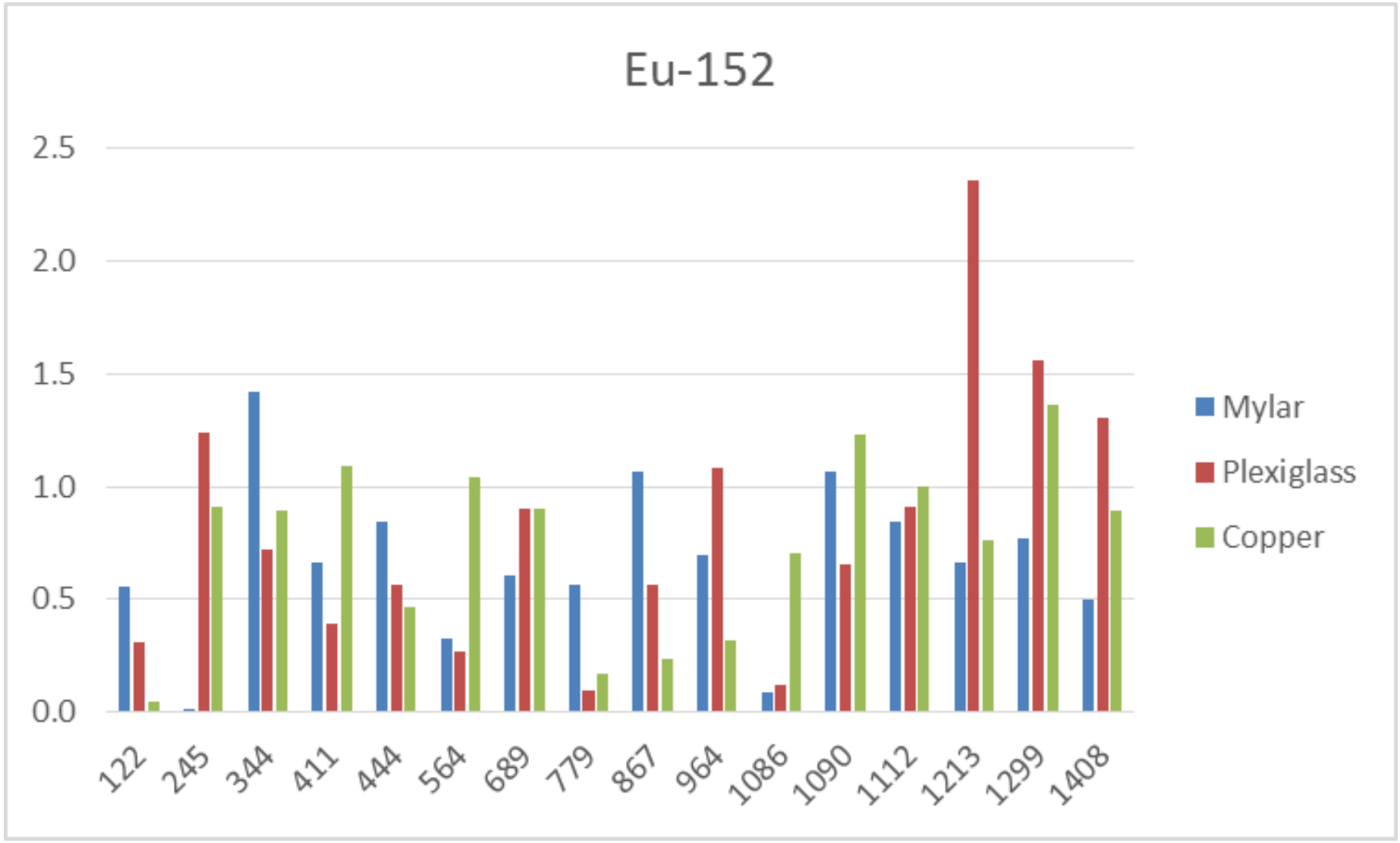
2013 Study by M-C Lepy et al.

- Coincidence summing correction factor measured and compared with computed values by different codes
- Water solution samples (70x26 mm) of Eu-152 and Cs-134
- Three different absorbers
- Efficiency calibration with mono-energetic radionuclides
- Low-energy detector, susceptible to X-Rays


Eu-152 Mylar
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
122
245
344
411
444
564
689
779
867
964
1086
1090
1112
1213
1299
1408
EFFTRAN
Average


Eu-152 Plexiglass
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
122
245
344
411
444
564
689
779
867
964
1086
1090
1112
1213
1299
1408
EFFTRAN
Average


Eu-152 Copper
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
122
245
344
411
444
564
689
779
867
964
1086
1090
1112
1213
1299
1408
EFFTRAN
Average


Eu-152
2.5
2.0
1.5
1.0
0.5
0.0
122
245
344
411
444
564
689
779
867
964
1086
1090
1112
1213
1299
1408
Mylar
Plexiglass
Copper

Results

- EFFTRAN performs just as well or better than an "average" code
- Computed values agree with measured ones within their combined uncertainties
- Uncertainty budget under control