SUPPORTING INFORMATION

Spatially Offset and Transmission Raman Spectroscopy for Determination of Depth of Inclusion in Turbid Matrix

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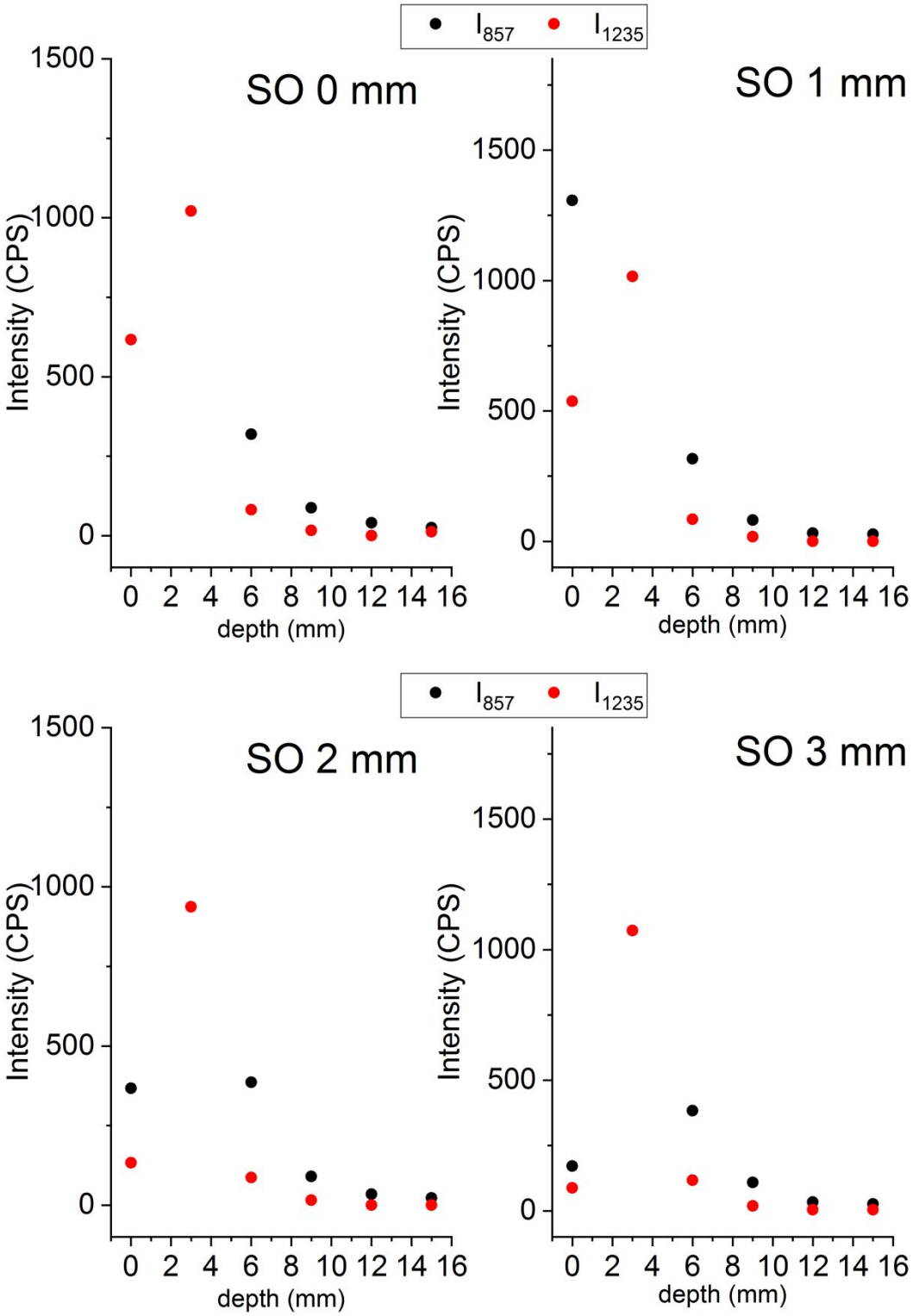
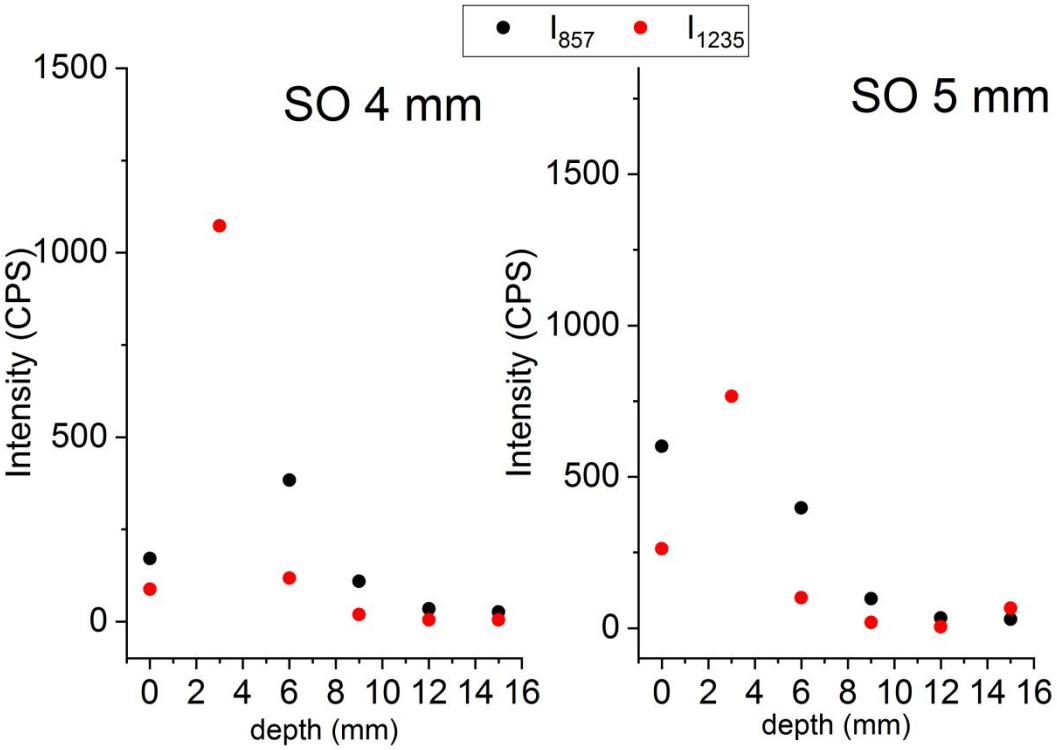
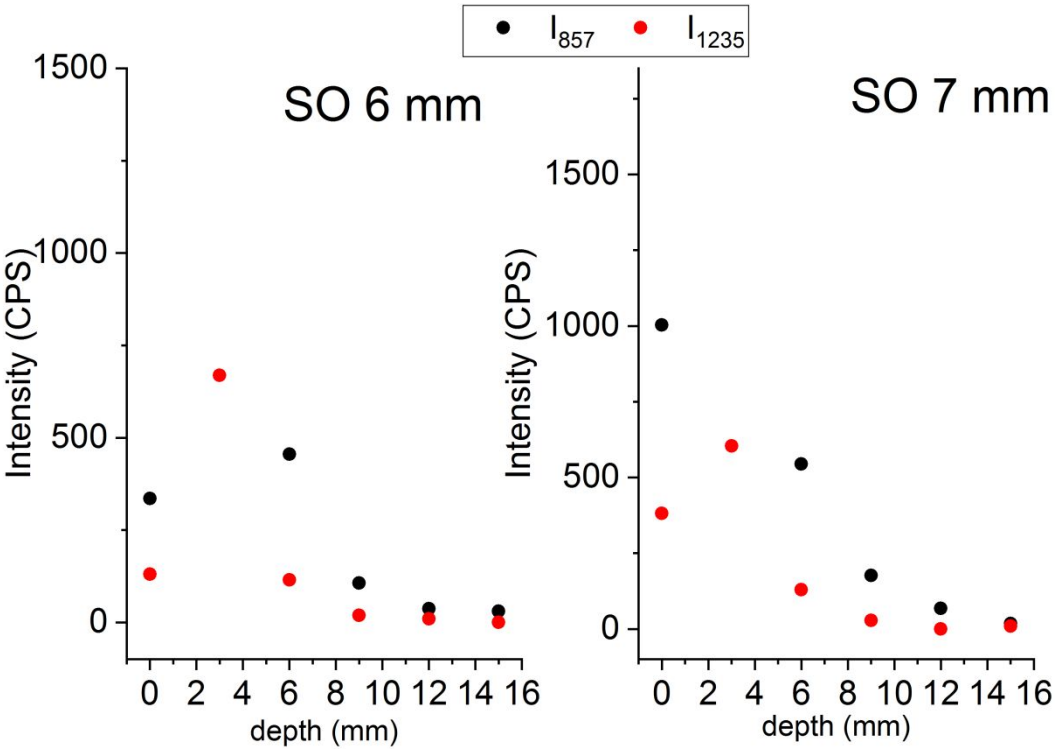
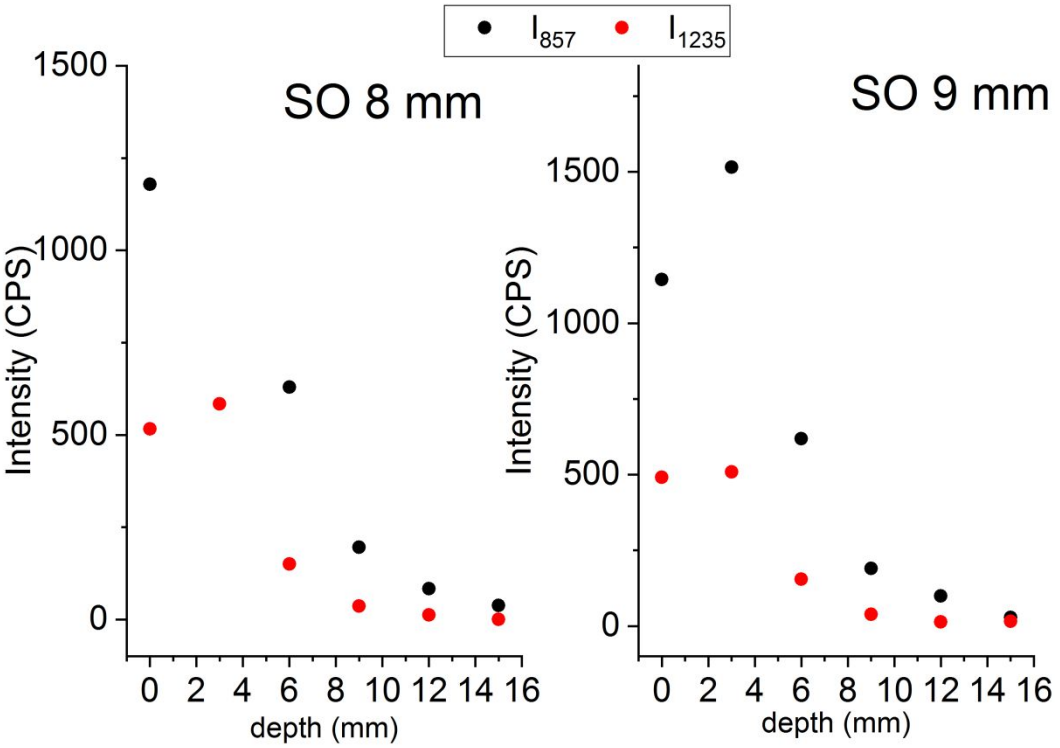
1. Raman intensities of paracetamol peaks

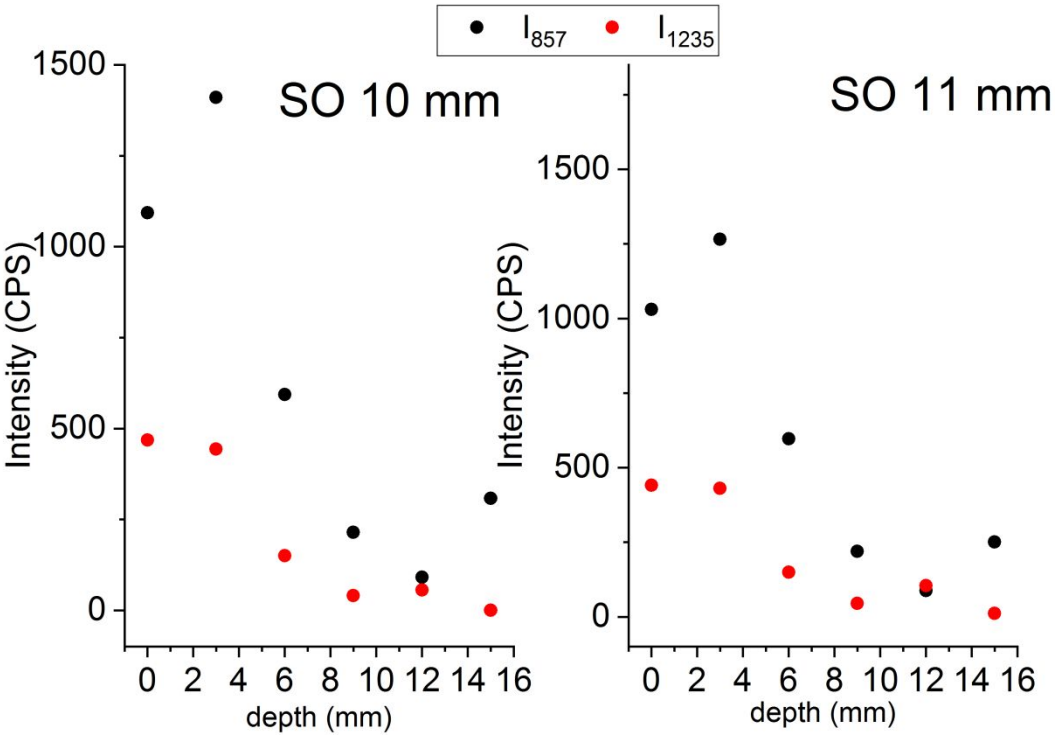
The absolute Raman intensity of the paracetamol peaks (857 cm^{-1} black, 1235 cm^{-1} red) at depth in the PE matrix collected with a SORS spatial offset SO = 1 to 12 mm and with TRS geometry.

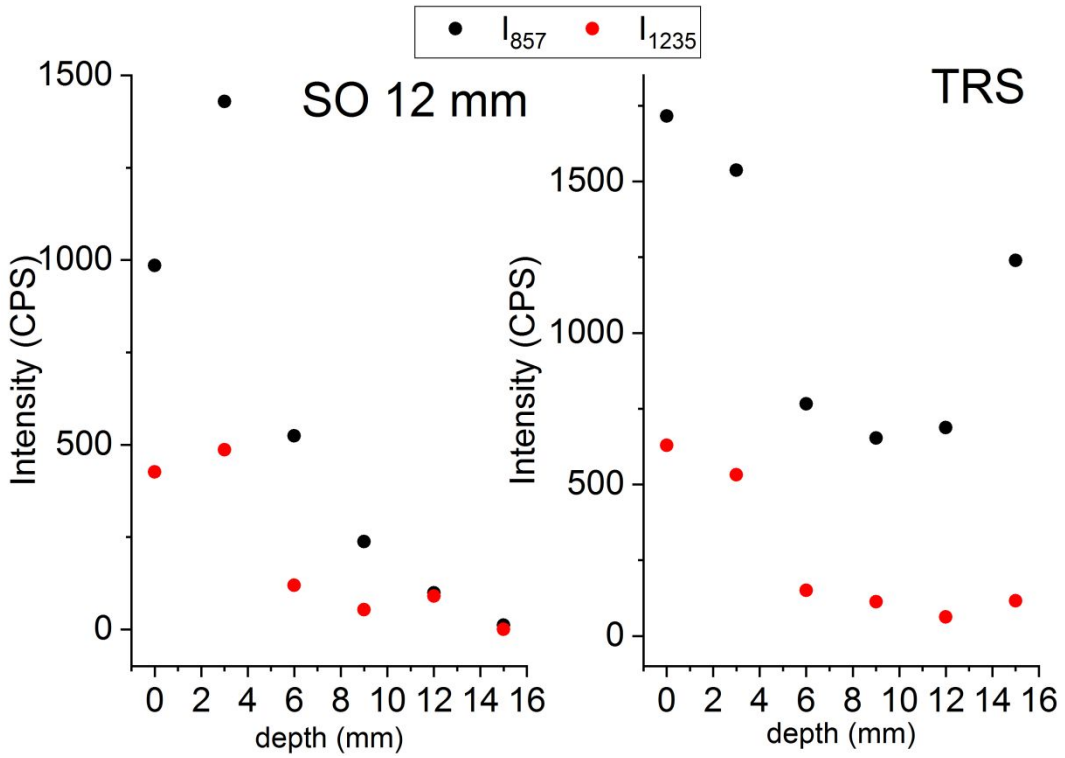



I857
I1235
SO 4 mm
SO 5 mm
Intensity (CPS)
depth (mm)
0
500
1000
1500
0 2 4 6 8 10 12 14 16


I857
I1235
SO 6 mm
SO 7 mm
Intensity (CPS)
depth (mm)
0
500
1000
1500
0 2 4 6 8 10 12 14 16


I857
I1235
SO 8 mm
SO 9 mm
Intensity (CPS)
depth (mm)
0
500
1000
1500
0 2 4 6 8 10 12 14 16


I857
I1235
SO 10 mm
SO 11 mm
Intensity (CPS)
depth (mm)
0
500
1000
1500
0 2 4 6 8 10 12 14 16

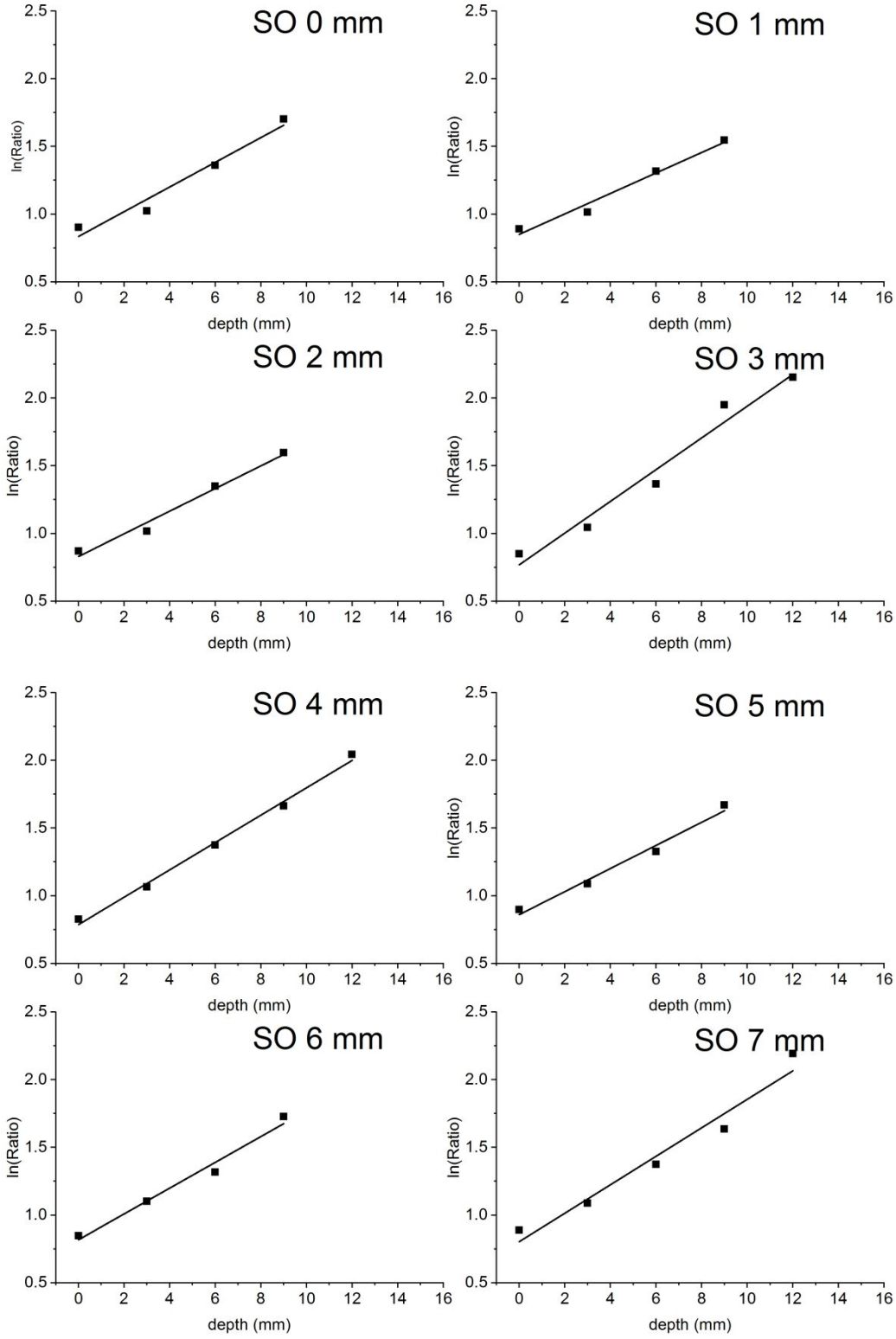


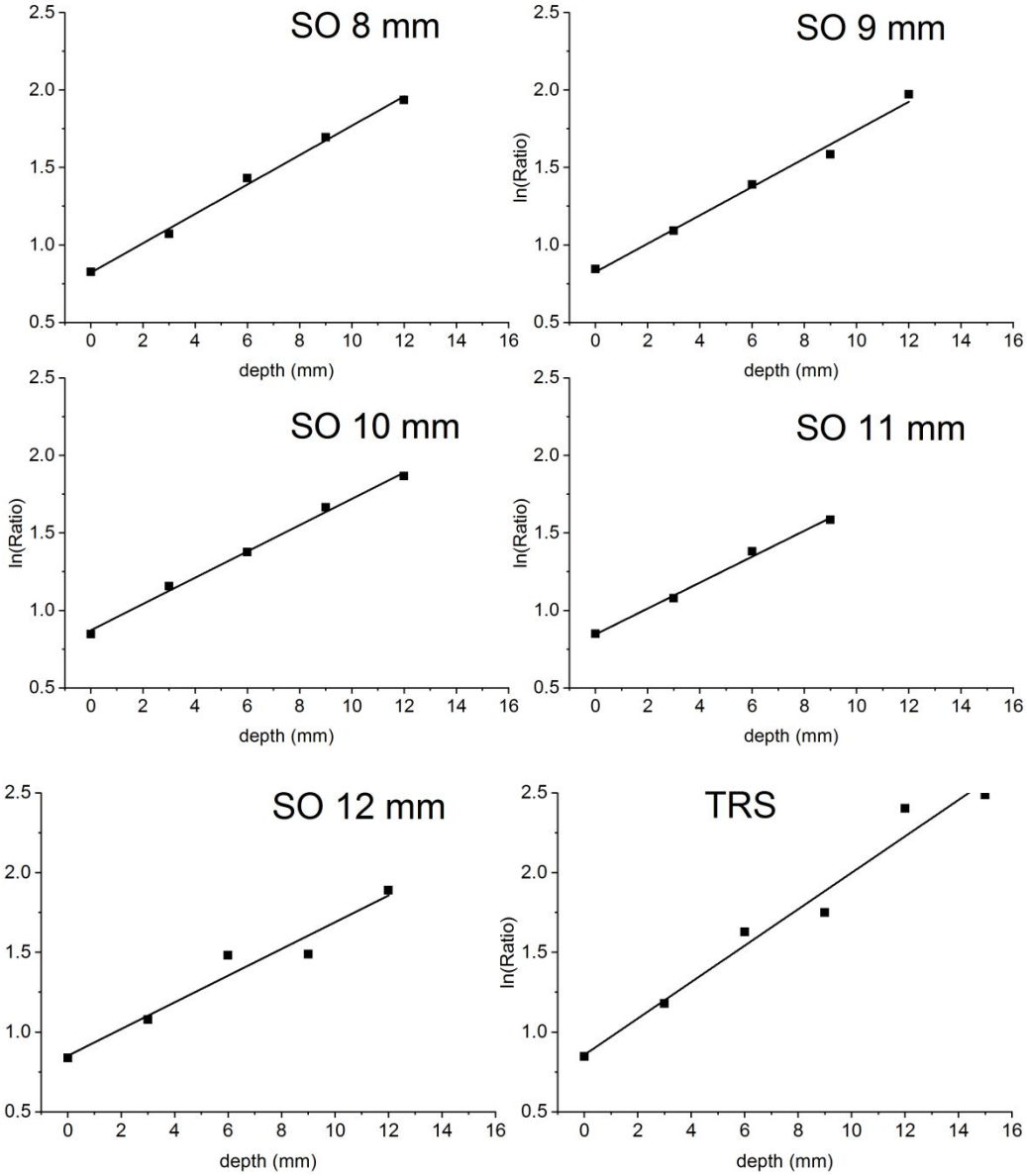
2. Calibration curve

Equations (y=a+ bx) obtained by a linear fit of the natural logarithm of the 857-to-1235 cm^{-1} ratio versus depth of inclusion in the turbid matrix. Standard error (σ) and R^2 statistical value are reported in column

Spatial offset (mm)	**a**, Intercept		**b**, Slope		**R^2**
	Value	Standard Error(σ)	Value	Standard Error(σ)	Regression coefficient
0	0.83603	0.07154	0.0912	0.01275	0.9436
1	0.85103	0.04551	0.07556	0.00811	0.96622
2	0.83069	0.0467	0.08361	0.00832	0.97087
3	0.76905	0.0892	0.11714	0.01214	0.95838
4	0.78769	0.03348	0.10097	0.00456	0.99191
5	0.86063	0.04533	0.08525	0.00808	0.97355
6	0.81843	0.05501	0.09521	0.0098	0.96886
7	0.80387	0.09048	0.10513	0.01231	0.9473
8	0.8229	0.02803	0.09477	0.00381	0.99355
9	0.82701	0.0379	0.09149	0.00516	0.98741
10	0.87332	0.02462	0.08477	0.00335	0.99378
11	0.84645	0.02397	0.0836	0.00427	0.99221
12	0.85303	0.07976	0.08372	0.01085	0.94599
TRS	0.8586	0.09112	0.1142	0.01003	0.96257

Natural logarithm of the 857-to-1235 cm^{-1} ratio of paracetamol peaks (black squares), with linear fit (black line)) used as a calibration curve for the creation of model




SO 8 mm
SO 9 mm
SO 10 mm
SO 11 mm
SO 12 mm
TRS
ln(Ratio)
depth (mm)