Electronic Supplementary Material (ESI) for Journal of Analytical Atomic Spectrometry.

Appendix. Supplementary data

Unraveling the role of aerosol transport on nanomaterial characterization by means single particle inductively coupled plasma mass spectrometry

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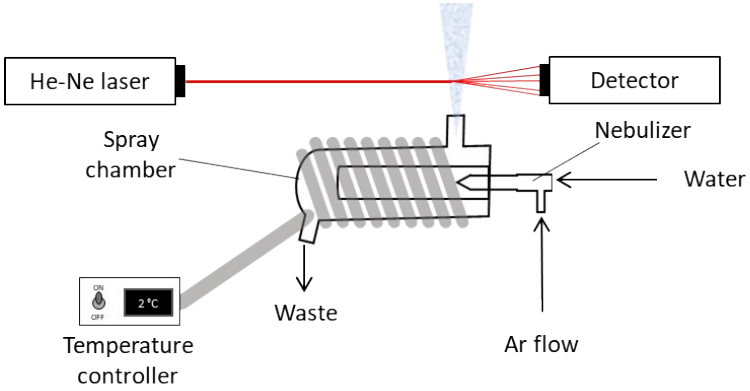

Figure S1. Experimental setup used for characterizing tertiary aerosol by means laser Fraunhoffer diffraction. Q_g 0.7-0.9-1.1 L min^{-1}. Q_l 100-300-500 µL min^{-1}.

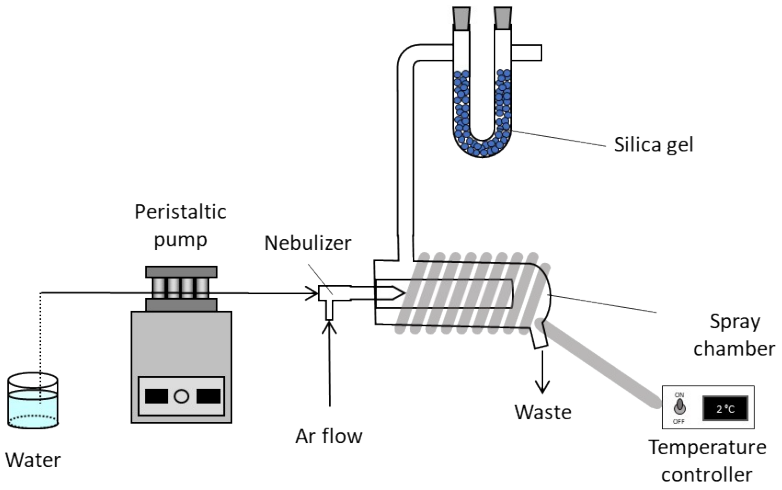

Figure S2. Experimental setup used for solvent transport measurements. Q_g 0.7-0.9-1.1 L min^{-1}; Q_l 100-300-500 µL min^{-1}.

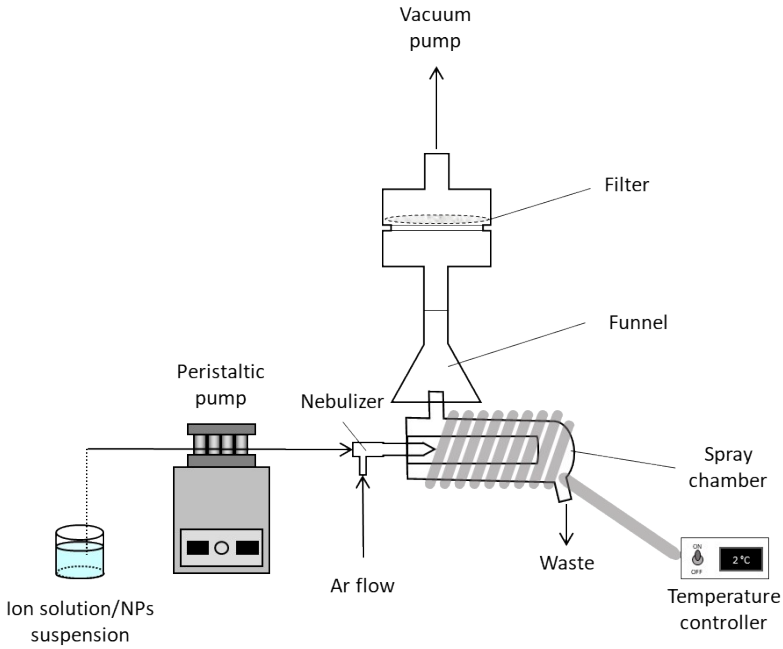

Figure S3. Experimental setup used for analyte transport measurements. Q_g 0.7-0.9-1.1 L min^{-1}. Q_l 100-300-500 µL min^{-1}. Ionic Pt concentration 10 µg mL^{-1}. Platinum NPs number concentration $9 \cdot 10^6$ mL^{-1}.

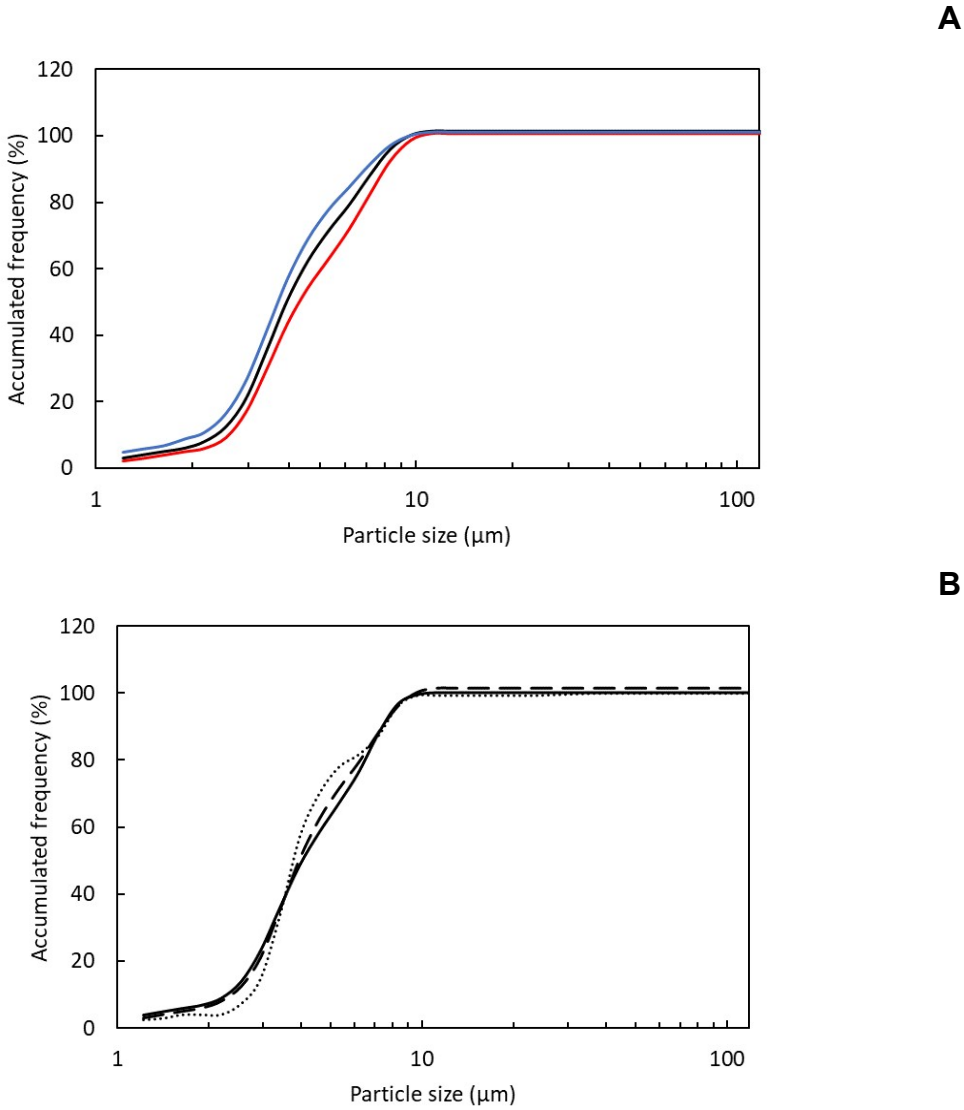

Figure S4. Tertiary aerosol drop size distribution obtained operating (A) Q_l 300 µL min^{-1} and Q_g 0.7 (red line), 0.9 (black line) or 1.1 L min^{-1} (blue line); or (B) Q_g 0.9 L min^{-1} and Q_l 100 (dotted line), 300 (dashed line) or 500 µL min^{-1} (continuous line).

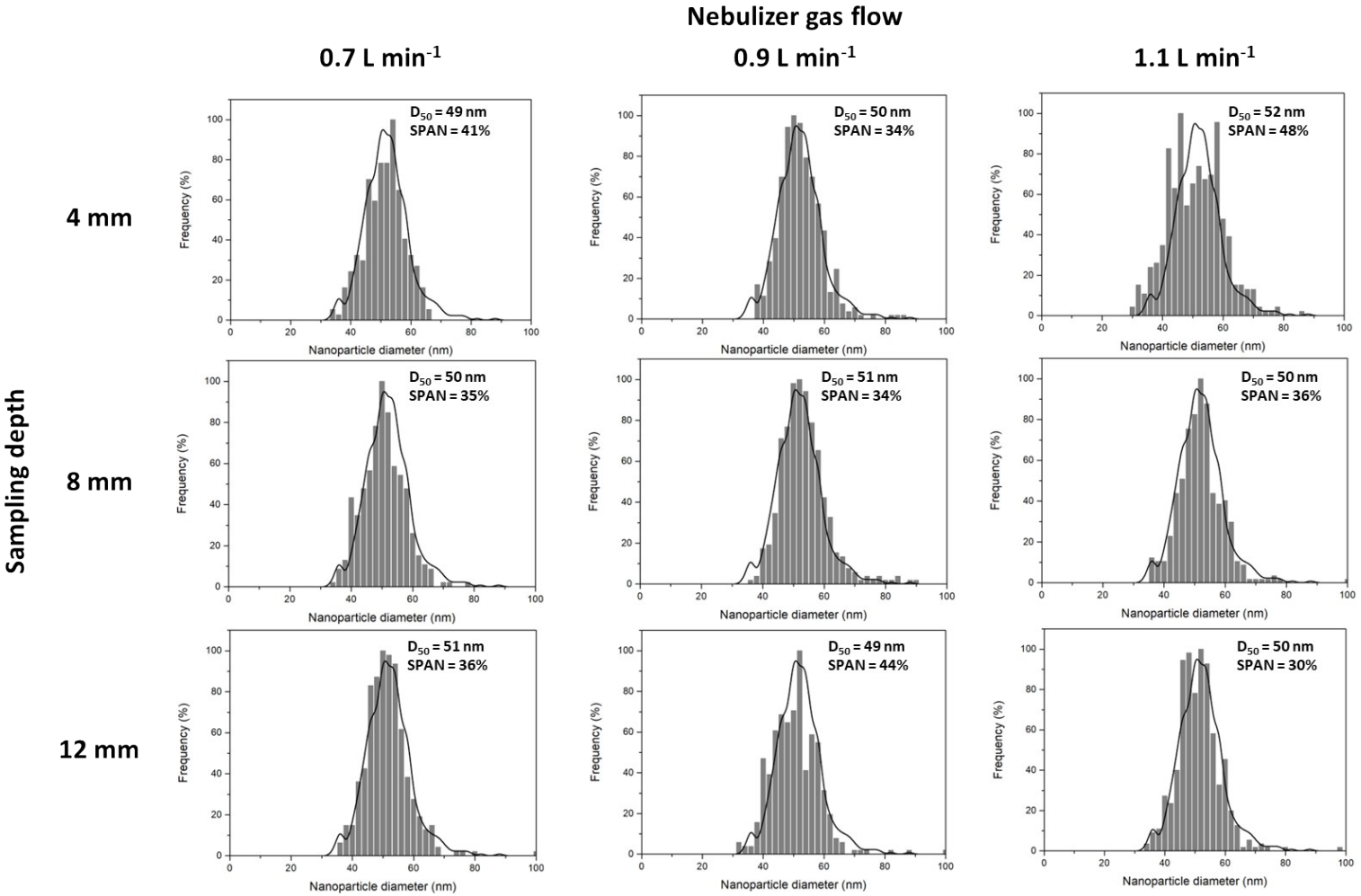

Figure S5. 50 nm AuNPs size distribution obtained using transport efficiencies calculated by means the number of events method under different operating conditions. R.f. power 1550 W; Q_l 300 µL min^{-1}. AuNPs concentration: 3.5·10^4 mL^{-1}. Continuous line represents TEM particle size distributions.

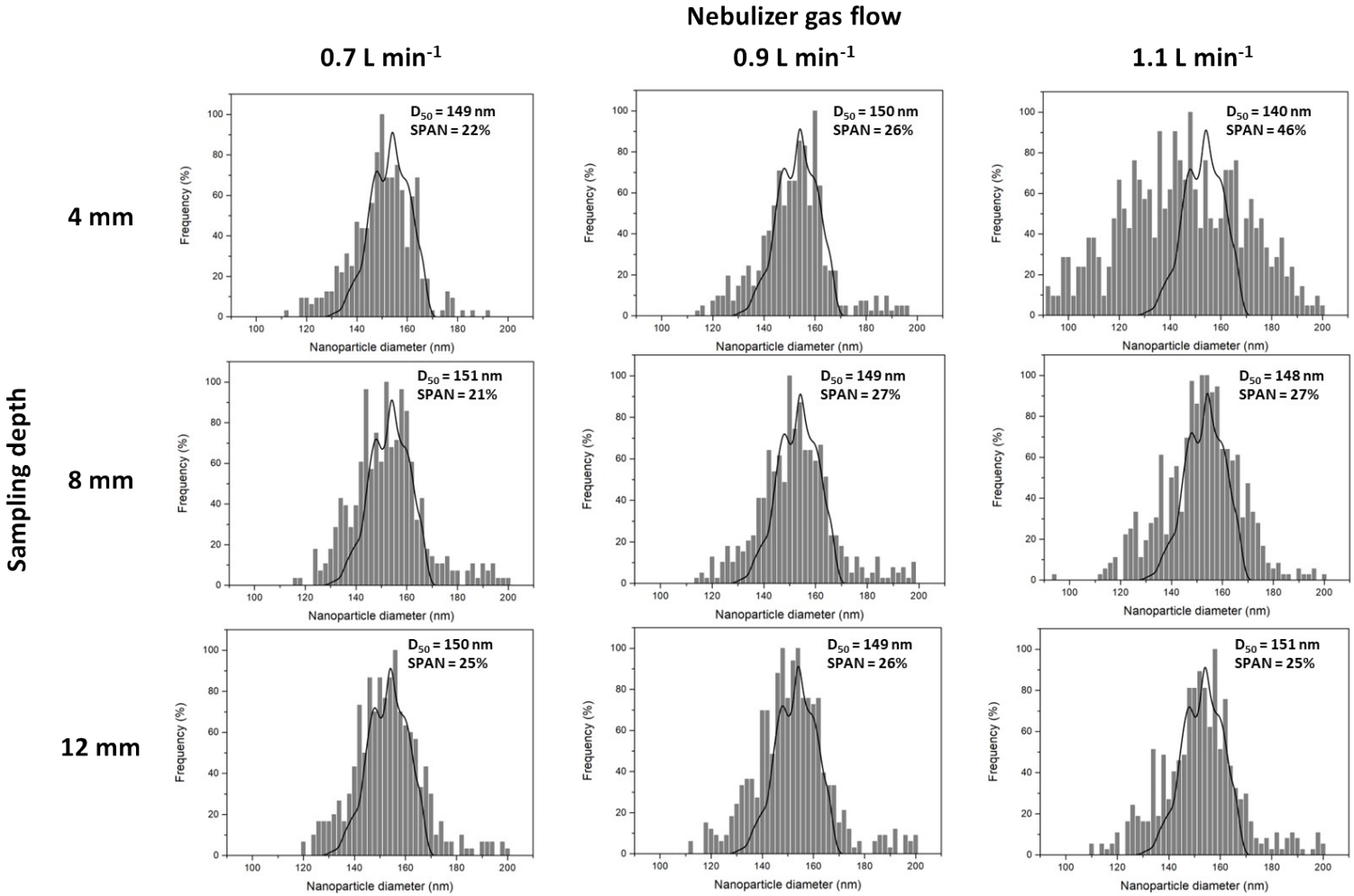

Figure S6. 150 nm AuNPs size distribution obtained using transport efficiencies calculated by means the number of events method under different operating conditions. R.f. power 1550 W; Q_l 300 µL min^{-1}. AuNPs concentration: $3.6 \cdot 10^4$ mL^{-1}. Continuous line represents TEM particle size distributions.

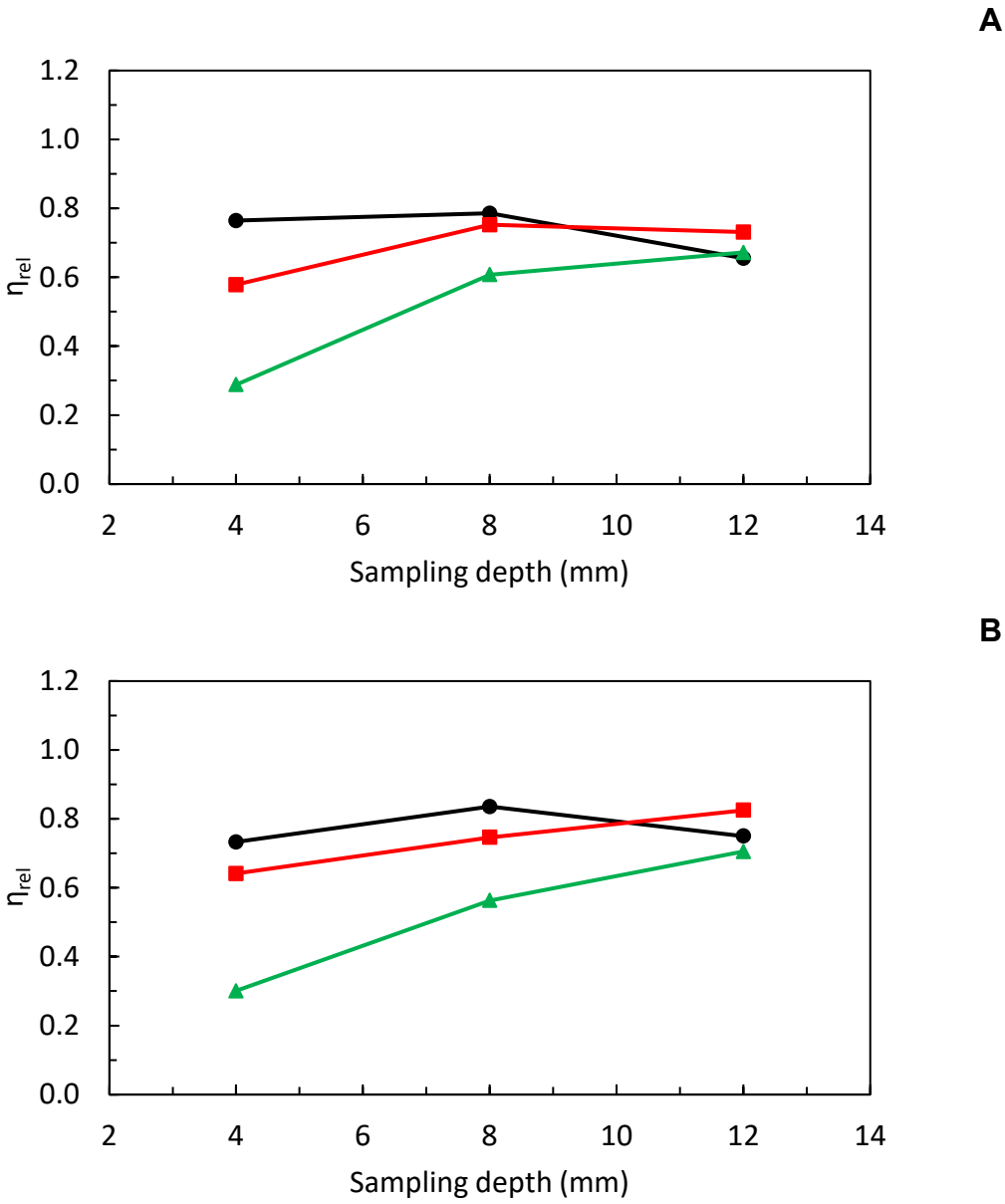

Figure S7. Influence of the SD on the transport efficiency ratio between number of events and ionic and NMs signal ratio methodologies (η_{rel}) for (A) 50 AuNPs and (B) 150 nm AuNPs operating different Q_g values. Q_g: 0.7 L min^{-1} (-●-), 0.9 L min^{-1} (-■-), and 1.1 L min^{-1} (-①-). R.f. power: 1550 W; Q_l: 300 µL min^{-1}.

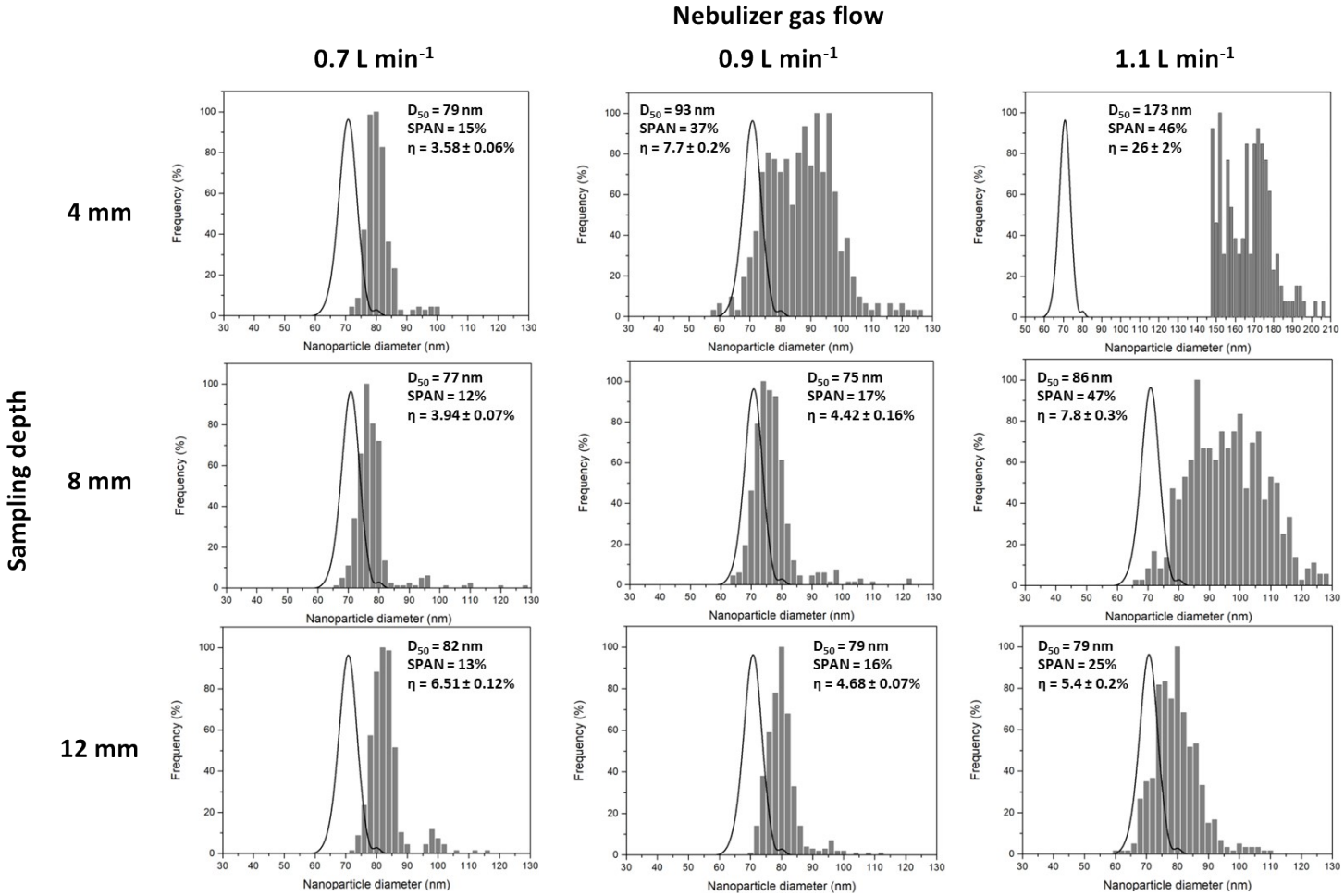

Figure S8. Platinum NPs size distribution obtained using transport efficiencies calculated by means the ionic and NMs signal method under different operating conditions. R.f. power 1550 W; Q_l 300 µL min^{-1}. PtNPs concentration: $1.5 \cdot 10^4$ mL^{-1}. Continuous line represents TEM particle size distributions.

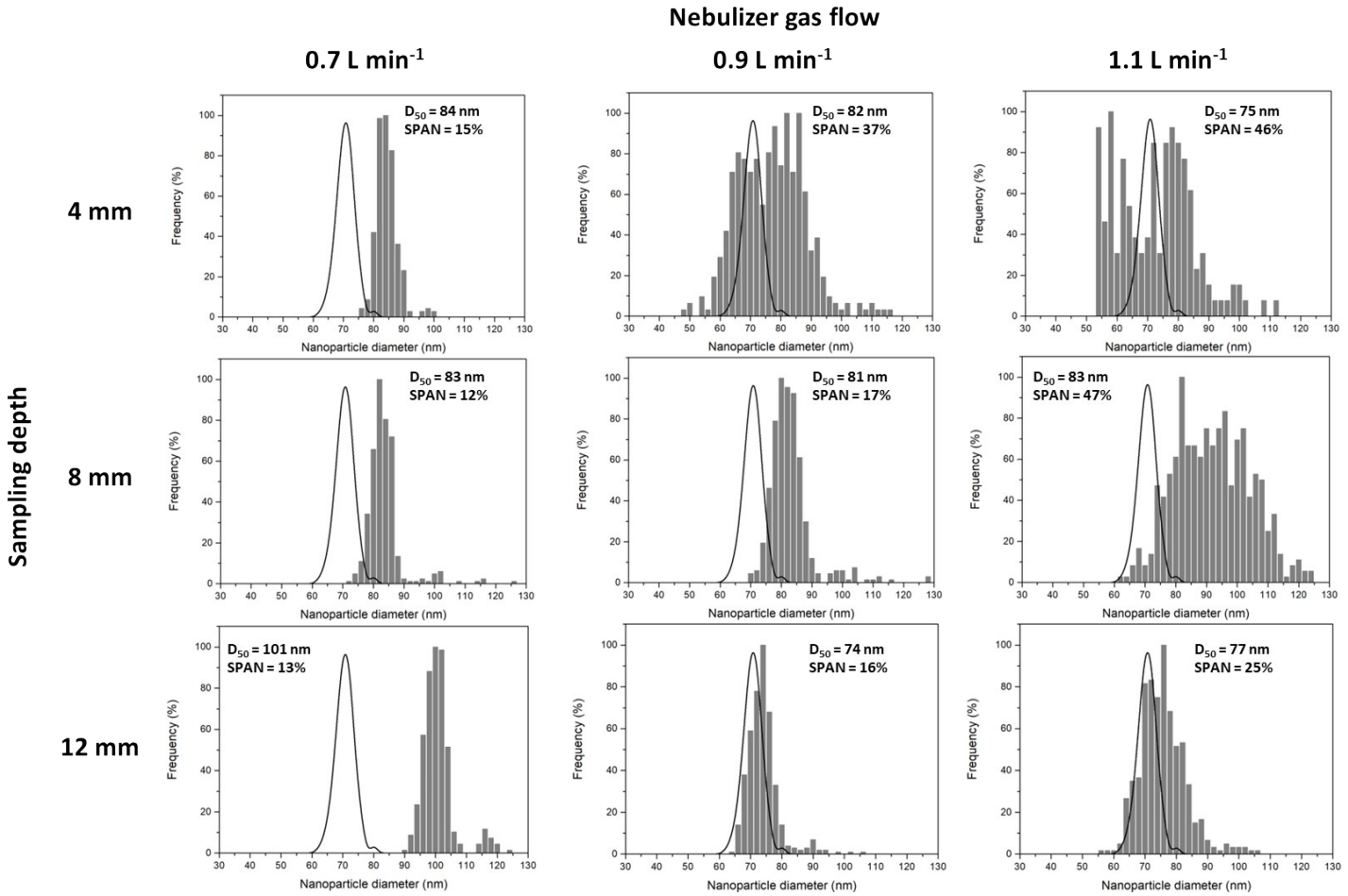

Figure S9. Platinum NPs size distributions obtained using transport efficiencies calculated by means solvent transport efficiency under different operating conditions. R.f. power 1550 W; Q_l 300 µL min^{-1}. PtNPs concentration: $1.5 \cdot 10^4$ mL^{-1}. Continuous line represents TEM particle size distributions