

Supplementary information

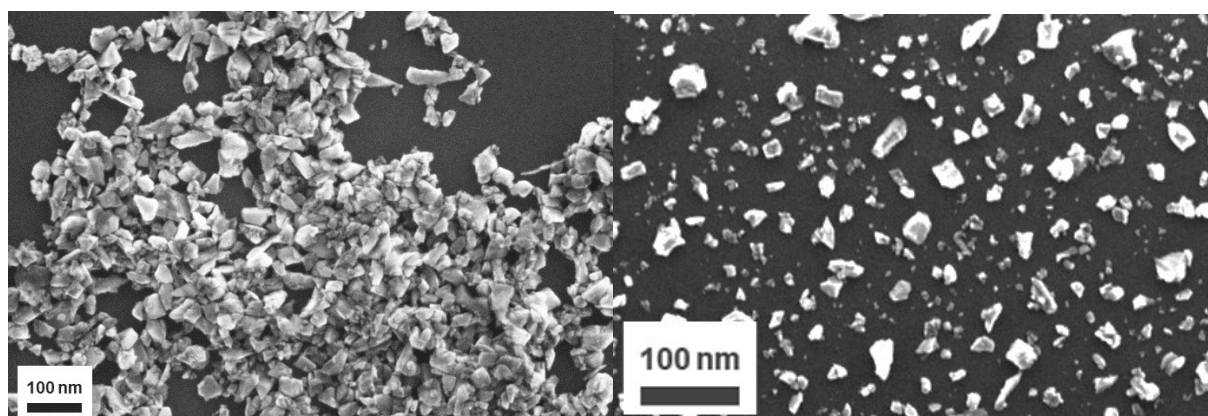


Figure S1 : SEM Pictures of SYP 0-0.1 deposited on a Si substrate by (left) drop cast and (right) layer by layer techniques

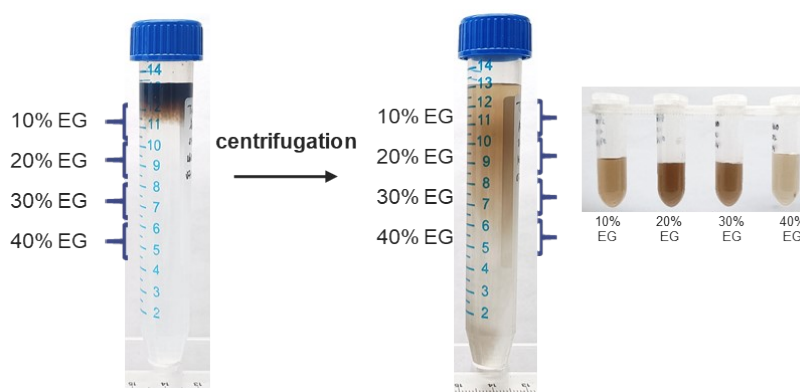


Figure S2 : Schematic diagram of the viscosity gradient technique.

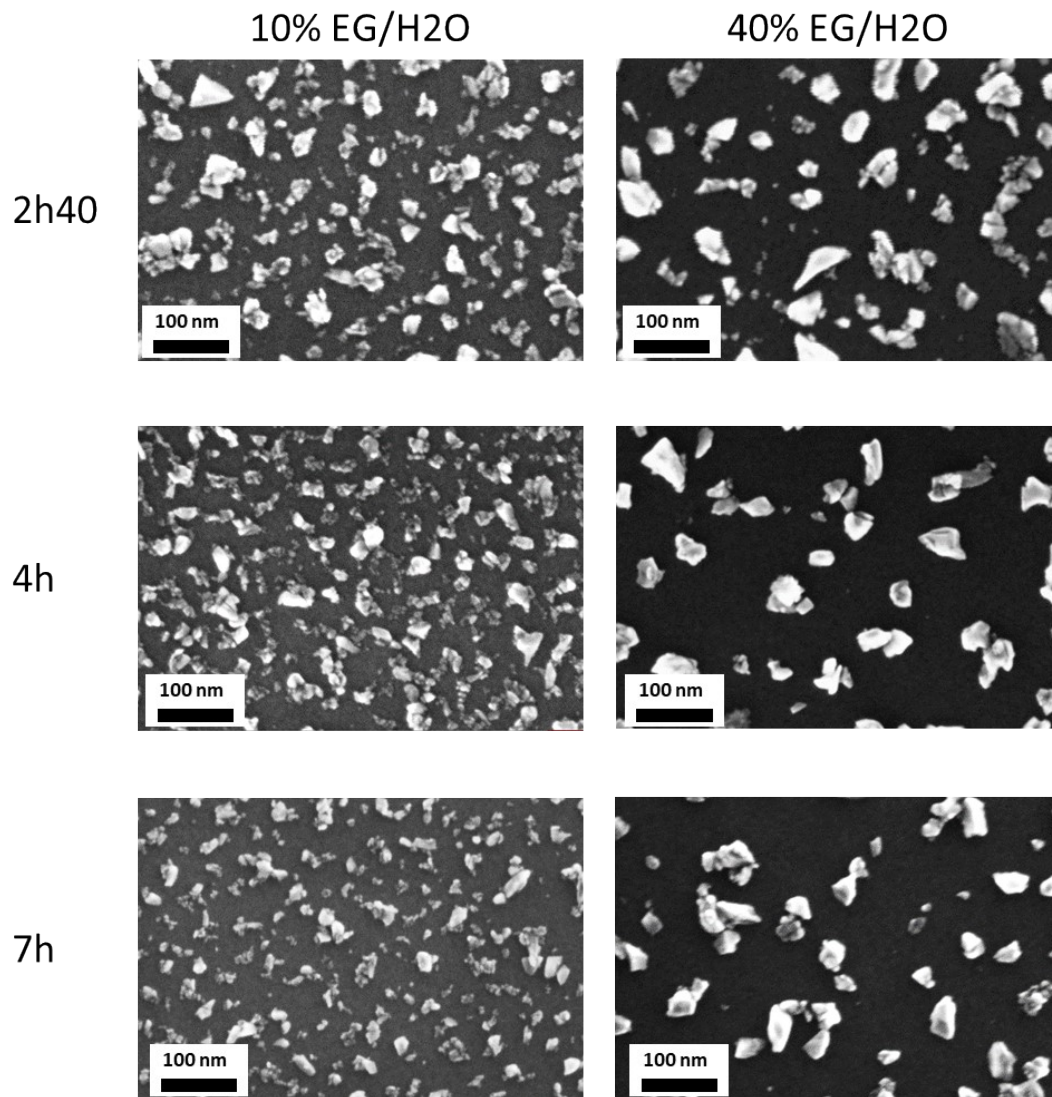


Figure S3 : Size sorting of Ox-MND (SYP 100) in a % EG/water viscosity gradient: influence of the centrifugation time (2h40 to 7h), the centrifugation speed is 2400 g. (left) SEM Pictures of 10 % EG/water phases; (right) SEM Pictures of 40 % EG/water phases.

Duration	Speed	Sample	AR	10% EG	40% EG	Pellet
-	-	SYP30	839	-	-	-
		SYP50	995	-	-	-
		SYP100	734	-	-	-
2h40	2400g	Ox SYP100	-	759	399	-
4h	2400g		-	878	329	168
7h	2400g		-	657	315	-
4h	1200g		-	528	377	-
4h	3600g		-	229	312	-
4h	2400g (50mL)		-	-	517	300

Table S1 : number of counted particle for each size distribution

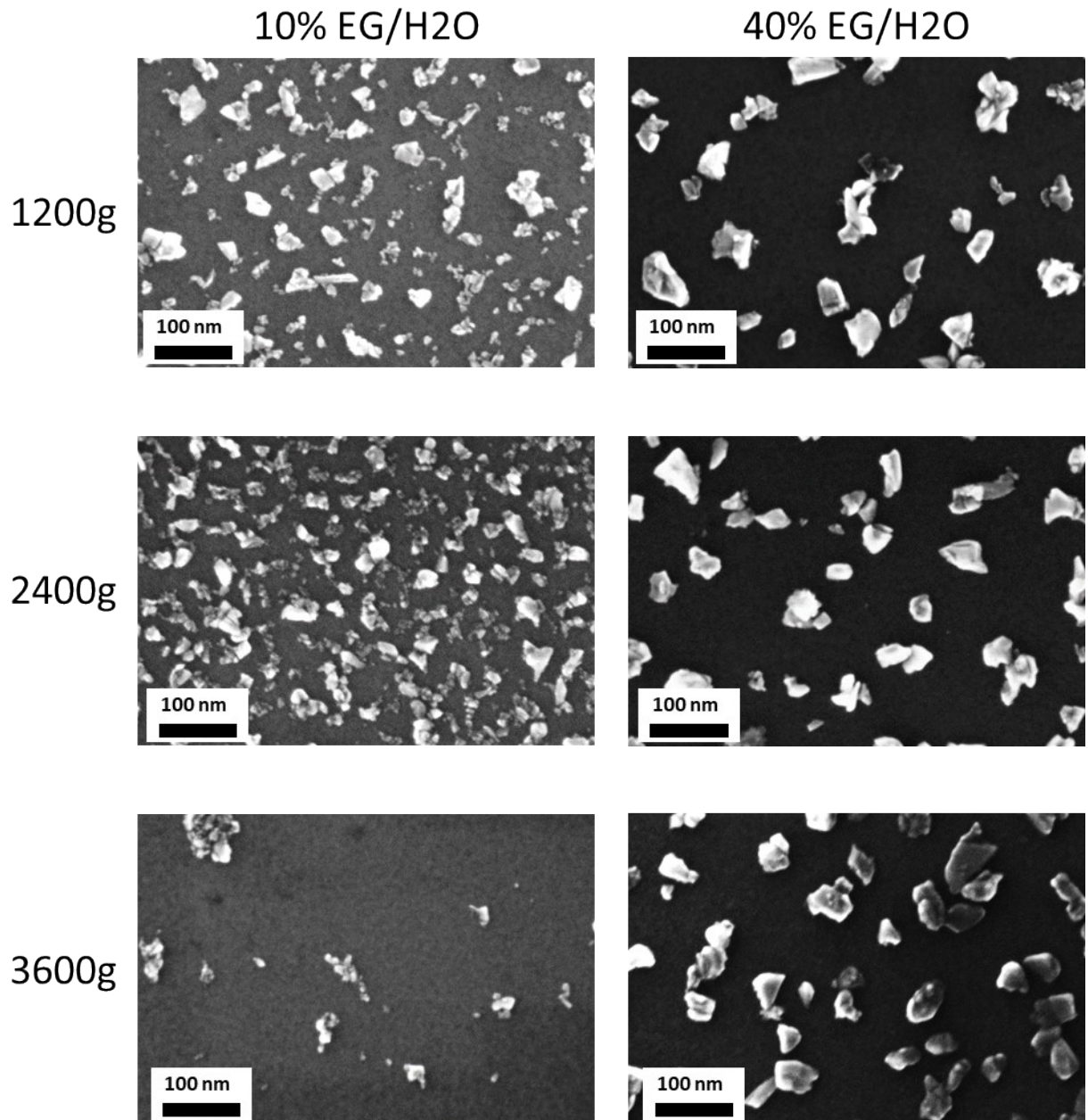


Figure S4 : Size sorting of Ox-MND (SYP 100) in a % EG/water viscosity gradient: influence of the centrifugation speed (1200g to 3600g), the centrifugation duration is 4h. (left) SEM Pictures of 10 % EG/water phases; (right) SEM Pictures of 40 % EG/water phases.

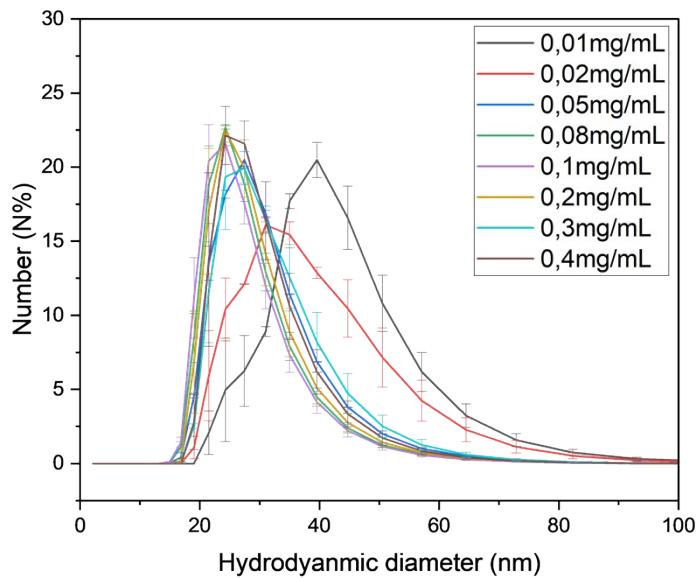


Figure S5 : Distribution of hydrodynamic diameters of oxidized SYP 100 nanodiamonds at various concentration obtained by DLS

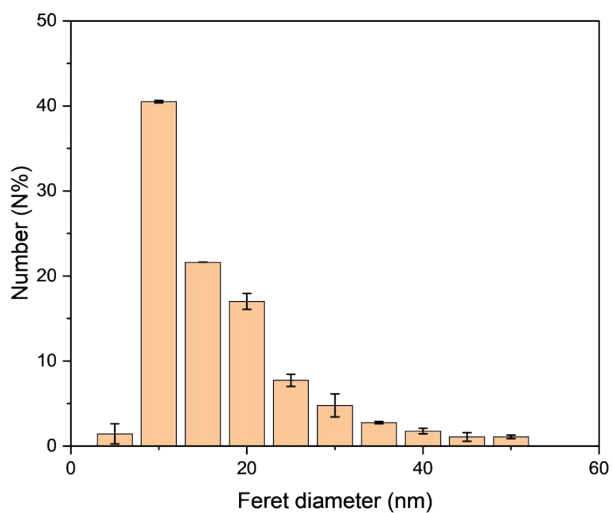


Figure S6 : Size distribution of oxidized SYP 100 nanodiamonds repeated independently to evaluate reproducibility of the counting method

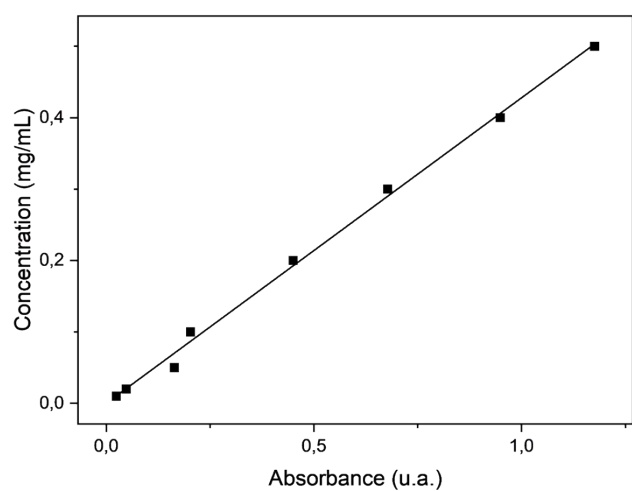


Figure S7 : Calibration curve of nanodiamond concentration as a function of absorbance measured by UV-Vis spectroscopy