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Supporting Information

for

Sputtering onto liquids: a critical review

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Comparison the sizes of the metal NPs prepared by magnetron sputtering onto similar host liquids

Depositions were done in the sputter coaters with 2-inch metal targets, at temperatures of 20–25 °C. Parameters: *p*- pressure (Pa), *WD* – working distance (mm), *V*- voltage (V), *I* -current (mA), t_s – duration of deposition (min), NP size – diameter of NPs determined by TEM (nm).

Table S1: Sputtering onto ionic liquid TMPA-TFSI.

Target	Amount of liquid substrate	*p*, Pa	*WD*, mm	*V*, V	*I*, mA	t_s, min	NP size (nm)	Ref.
Pt	0.4 cm^3 of IL on a glass plate (2.5 x 2.5 cm)	7	45		40	5	2.24±0.36	[1]
Pt	0.2 cm^3 of IL on a glass plate (2.5 x 2.5 cm)	7	45		40	5 → 30	2.3-2.4	[2]
Pt AuPt Au	IL was spread on a glass plate 10 cm^2	10	20	500	40	5	1.0 ± 0.3 1.5 ± 0.4 2.9 ± 0.7	[3]
Au	0.8 cm^3 of IL on a glass plate 4 cm^2	20	35		10	5	2.2±0.4	[4]
Au	0.6 cm^3 of IL on a glass plate 10 cm^2	20	35		40	5	2.3±0.3	[5]

Table S2: Sputtering onto ionic liquid BMIM-PF_6.

Target	Amount of liquid substrate	*p*, Pa	*WD*, mm	*P, W*	*V*, V	*I*, mA	t_s, min	NP size (nm)	Ref.
Au	0.6 cm^3 of IL on a glass plate 10 cm^2	20	35			40	5	2.6 ± 0.3	[6]
Au	0.6 cm^3 of IL on a glass (26 x 38x 1mm3)	20	30			40	5	2.3 ± 0.4	[7]
Au	0.60 cm3 of IL on a glass slide (5.7 cm^2)	20	35			40	5	2.5	[8]
Au	0.60 cm3 of IL on a glass slide (10 cm^2)	20	35			40	5	2.6±0.6	[9]
Au	2.0 cm^3 of IL on a stainless plate 15.9 cm^2	16-19	25		1000	20	50	1.0–1.5	[10]
Au	1.0 cm^3 of IL on a Teflon plate 6.1 cm^2	20	35			40	5	2.6±0.3	[11]
Ag	1.0 cm^3 of IL on a Teflon plate 6.1 cm^2	20	35			40	5	6±1.5	[11]
Ag	multiple cavity holder (40 µL per cavity)	0.5		30			15	6±3	[12]
Ag	0.6 cm^3 of IL on a glass plate 10 cm^2	5 5	85 85			10 40	5 5	5.7±1.8 11	[13]
Pd	0.2 cm^3 of IL on a glass plate (2.5 x 2.5 cm)	8	45			40	5	3.0	[14]

Table S3: Sputtering onto ionic liquid BMIM-TFSI.

Target	Amount of liquid substrate	*p*, Pa	*WD*, mm	*P, W*	*V*, V	*I*, mA	t_s, min	NP size (nm)	Ref.
Pd	0.2 cm^3 of IL on a glass plate (2.5 x 2.5 cm)	8	45			40	5	2.2	[14]
Au	0.6 cm^3 of IL on a glass (26 x 38x 1 mm3)	20	30			40	5	2.0 ± 0.4	[7]
Au	3.5 cm^3 of IL was poured in a PTFE container (ϕ =4 cm)	10	40			50	1	5-6	[15]
Ag	multiple cavity holder (40 µL per cavity)	0.5		30			15	8±4	[12]
Ag	4 cm^3 of IL into a cylindrical ceramic crucible (ϕ =4.5 cm)	1.3	150	20			20	5-20	[16]

Table S4: Sputtering onto pure PEG-600.

Target	Amount of liquid substrate	*p*, Pa	*WD*, mm	*V*, V	*I*, mA	t_s, min	NP size (nm)	Ref.
Pt	2 ml on a Petri plate	8	50		30		3.9	[17]
Au	2 ml on a Petri plate	8	50		30		6.3	[17]
Au	2 ml on a Petri plate (ϕ = 4 cm)	10	50	420-430	30	5 and 15	5.6±1.9	[18]
Au	2 ml on a Petri plate (ϕ = 4 cm)	10	50	420-430	30	5	5.6±1.8	[19]
Ag		2	50		30	20	7.4±3.6	[20]

Table S5: Sputtering onto pure glycerol.

Target	Amount of liquid substrate	*p*, Pa	*WD*, mm	*V*, V	*I*, mA	t_s, min	NP size (nm)	Ref.
Pt	5 ml on a Petri plate (ϕ = 4cm)	4-6	50	420	40	5	1.7±0.3	[21]
Pd	5 ml on a Petri plate (ϕ = 4cm)	4-6	50	420	40	5	2.4±0.4	[21]
Au	2 ml on a Petri plate (ϕ = 4cm)	7	50		30	5	3.5 ±1.5	[22]
Ag	2 ml on a Petri plate (ϕ = 4cm)	7	50		30	5	3.5 ±2.4	[22]

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