Controlled synthesis of copper oxide nanoparticles (CuONPs): optimization of the synthesis parameters and proposition of growth mechanism

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Table S1. Summary of the crystallite size and their average for all precursor combination and the intensity ratio of peak (-111) and (111) peak (taken as ratio) for each sample

	$Cu(NO_3)_2$ /NaOH (reference)			$Cu(CH_3COO)_2$ /NaOH			$CuSO_4$ /NaOH			$Cu(NO_3)_2$ /KOH			$Cu(NO_3)_2$ /NH_4OH		
	peak position (°)	crystallite size (nm)	peak int. (a.u.)	peak position (°)	crystallite size (nm)	peak int. (a.u.)	peak position (°)	crystallite size (nm)	peak int. (a.u.)	peak position (°)	crystallite size (nm)	peak int. (a.u.)	peak position (°)	crystallite size (nm)	peak int. (a.u.)
	32.475	19.4	2.0552	32.43	17.1	4.5782	32.469	20.8	7.3522	32.496	13.2	2.6573	32.467	16.6	3.1156
	35.49	10.7	16.4407	35.45	12.8	45.5154	35.512	14.8	64.2256	35.577	10.8	23.0255	35.489	13.1	27.8193
	38.698	10	20.6812	38.62	12.4	50.0428	38.635	13.3	66.1259	38.688	10.7	27.4715	38.629	13.0	32.7197
	48.788	9.9	4.9451	48.86	11.3	9.7002	48.717	14.2	12.8529	48.686	10.8	5.6694	48.598	12.9	7.0369
	53.465	15	2.3729	53.40	16.2	3.6823	53.483	20.3	5.3852	53.632	17.6	2.8368	53.484	19.9	3.3985
	57.88	14.8	2.4093	57.93	15.2	4.1320	58.088	17.6	4.7012	58.155	11.4	2.5092	57.959	14.5	3.0999
	61.442	10.3	3.2800	61.41	15.4	5.5350	61.556	18.0	6.7459	61.472	13.5	4.0562	61.383	16.6	4.7193
	66.181	11	4.8022	66.18	18.8	5.2993	66.100	20.1	8.4188	66.132	19.6	5.8524	66.064	20.7	6.2175
	67.91	15.3	3.5013	67.91	29.6	4.9257	67.966	33.0	6.4886	68.036	27.5	4.2665	68.085	27.0	4.8320
average (nm)		12.9 ± 3.3			16.5±5.4			19.1±5.9			15.0±5.7			17.1±4.7	
$I_{(-111)}/I_{(-111)ref}$			1.0			2.8			3.9			1.4			1.7
$I_{(111)}/I_{(111)ref}$			1.0			2.4			3.2			1.3			1.6
Zeta potential (mV)	+46.0±4.5			+50.4±6.2			+40.1±3.1			+42.1±1.0			+31.0±3.5		

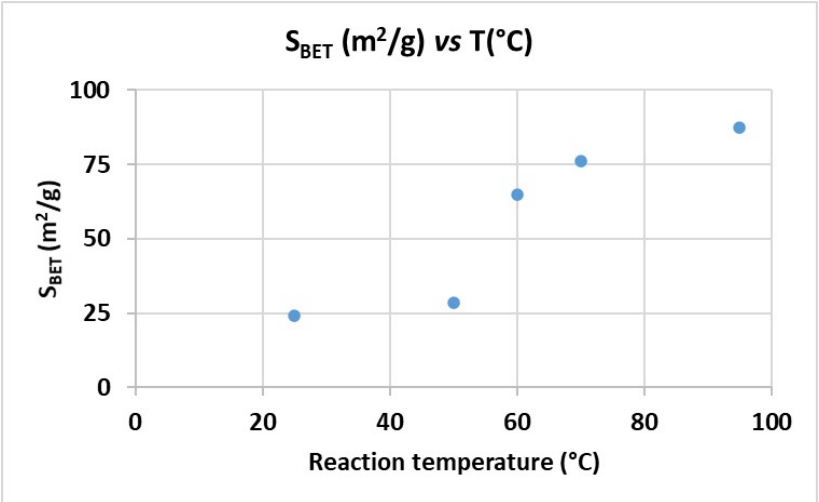

Figure S1. Specific surface area measurement as a function of temperature reaction

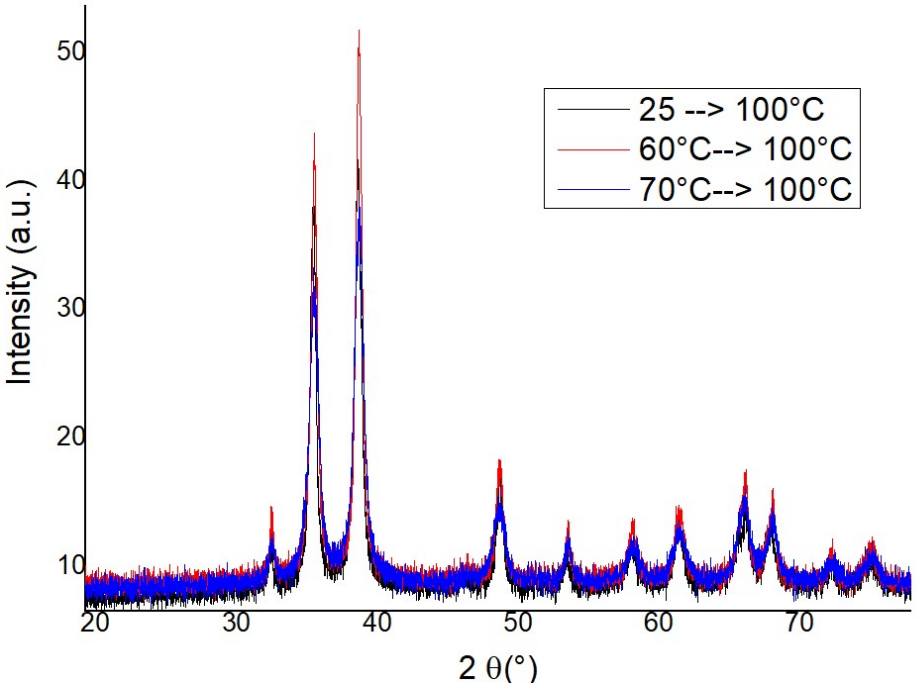

Figure S2. XRD of CuONPs synthesized at 25, 60 and 70°C and then heated at 100°C.

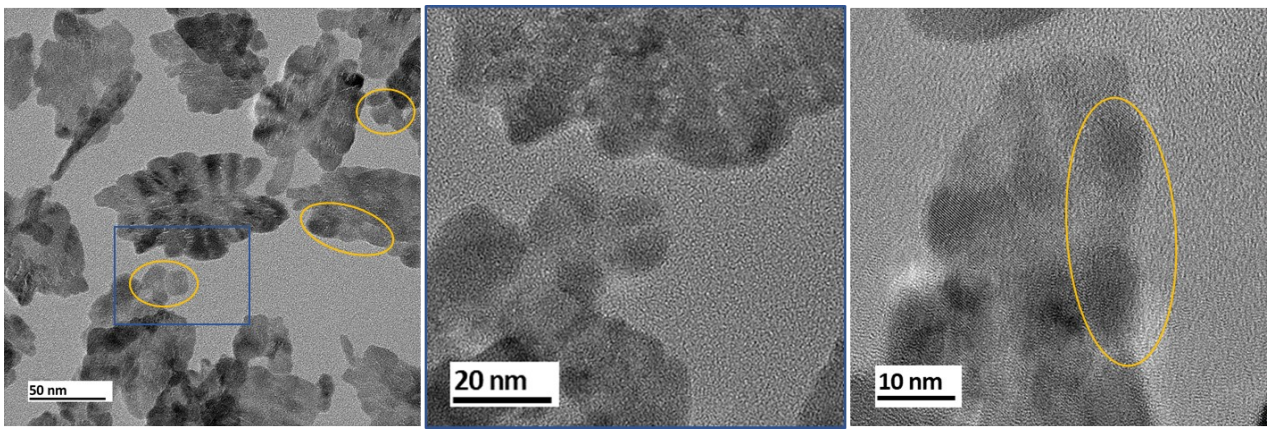

Figure S3. HRTEM images of flake-shaped copper-based nanoparticles synthesized at 60°C and heated at 100°C highlighting the fragmentation phenomenon

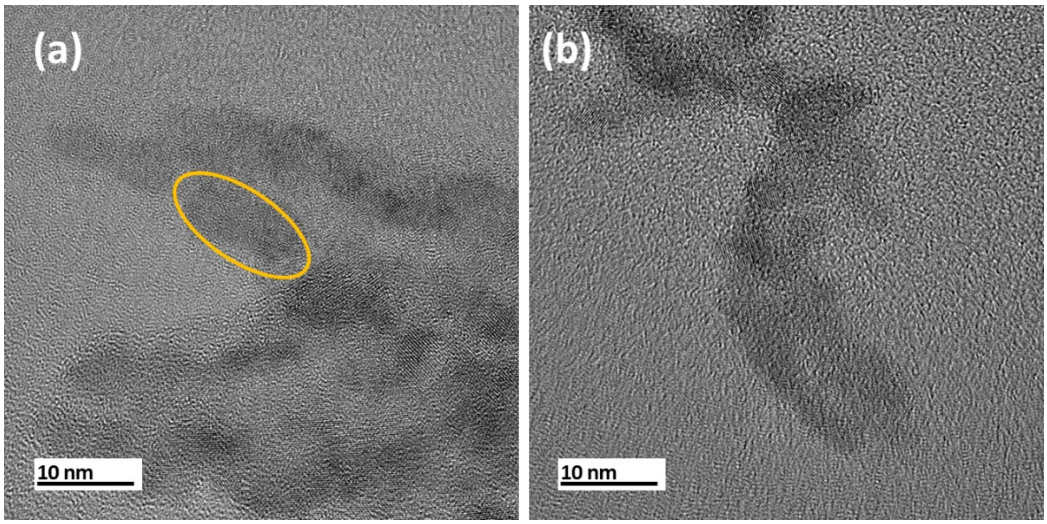

Figure S4. HRTEM images of CuONPs synthesized at copper concentration of 0.5M