

Supplementary data

Table S1. Average atomic concentration of components in the sputtered catalysts (at. %).

Sample	C	N	O	Al	Si	Cr	Fe	Ni	Cu
Mesh	8.7	2.8	4.5	0.2	0.9	16.5	59.9	6.5	0.0
Cu _s	7.8	1.4	34.5	0.2	0.3	6.0	20.1	1.9	27.9
NiCu14 _s	8.7	2.2	39.3	0.2	0.2	4.5	14.1	5.7	25.3
NiCu11 _s	9.3	1.9	33.6	0.2	0.2	6.1	20.4	14.9	13.4
NiCu41 _s	8.3	1.6	35.7	0.1	0.2	6.0	20.2	21.2	6.6
Ni _s	13.4	1.3	26.3	0.2	0.5	9.5	34.2	14.5	0.2

Table S2. Kinetic energy of the main Auger lines observed for granular and sputtered catalysts.

Sample	Cu _g	NiCu14 _g	NiCu11 _g	NiCu41 _g	Ni _g
NiLMM	-	844.29	844.22	844.27	844.31
CuLMMb	838.72	838.64	838.64	838.64	-
CuLMMa	918.26	918.2	918.21	918.15	-
	Cu _s	NiCu14 _s	NiCu11 _s	NiCu41 _s	Ni _s
NiLMM	-	844.32	844.12	844.12	844.12
CuLMMb	838.2	838.68	838.64	838.64	-
CuLMMa	917.85	918.29	918.15	918.15	-

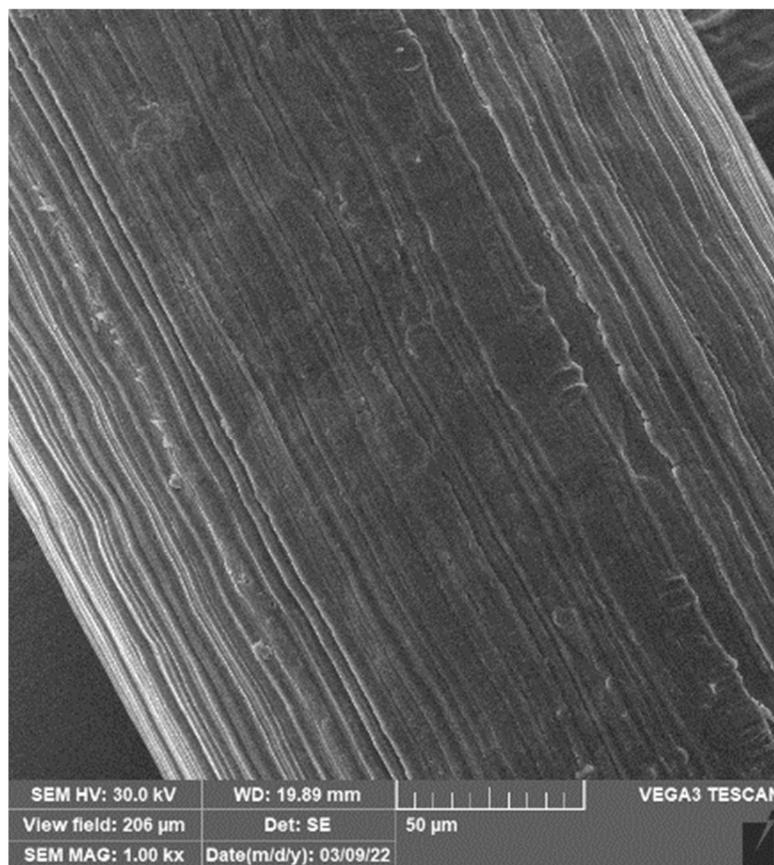


Figure S1. SEM image of the bare stainless steel mesh.

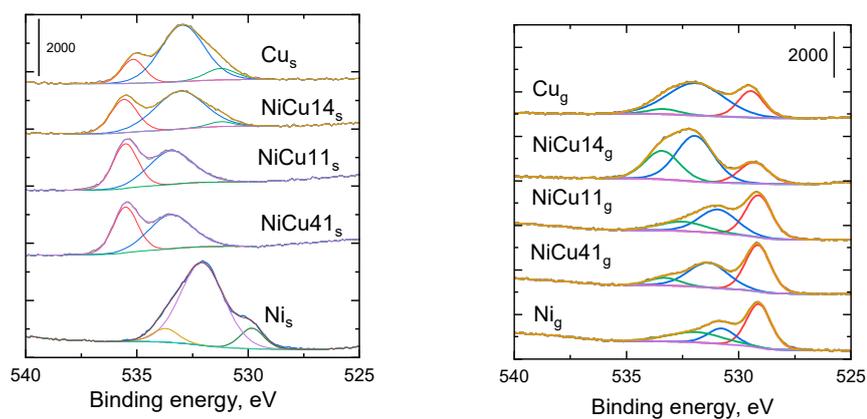


Figure S2. O1s deconvolution of sputtered (left) and granular (right) catalysts.

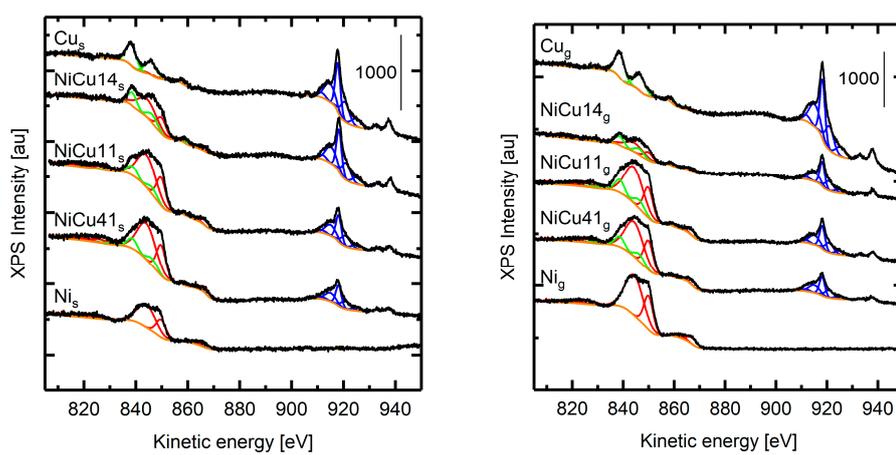


Figure S3. Deconvoluted XPS spectra corresponding to Auger lines Cu LMMa (blue), Cu LMMb (green) and Ni LMM (red) of sputtered (left) and granular (right) catalysts.