

Supporting information

Surface modification of CoCr alloys by electrochemical reduction of diazonium salts.

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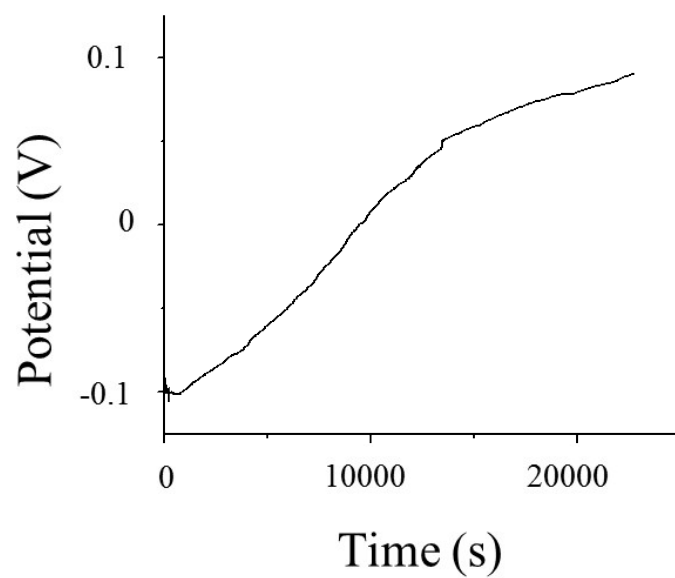


Figure S1. Open circuit potential (OCP) of CoCr in HCl (0.5M).



Figure S2. The surface of CoCr at OCP (left) and after application of 1V for 15 min (right).

Table S1. High resolution XPS peak deconvolution: binding energies used to fit the components of Cr_{2p3/2}, Cr_{2p3/2}, O_{1s} and C_{1s}.

Peak	Oxidation state	Binding energy (eV)
Cr _{2p3/2}	Cr ⁰	573.8 ± 0.4
	Cr ³⁺ oxide	576
	Cr ⁶⁺	578
Co _{2p3/2}	Co ⁰	778.0 ± 0.6
	Co oxide	779.5
	Co(II)satellite	782.2
O _{1s}	O ²⁻	530.1 ± 0.4
	OH ⁻	531.7
	H ₂ O	532.6
C _{1s}	carbide	283 ± 0.2
	C-C	584.8
	C-O	586.4
	C=O	588.5

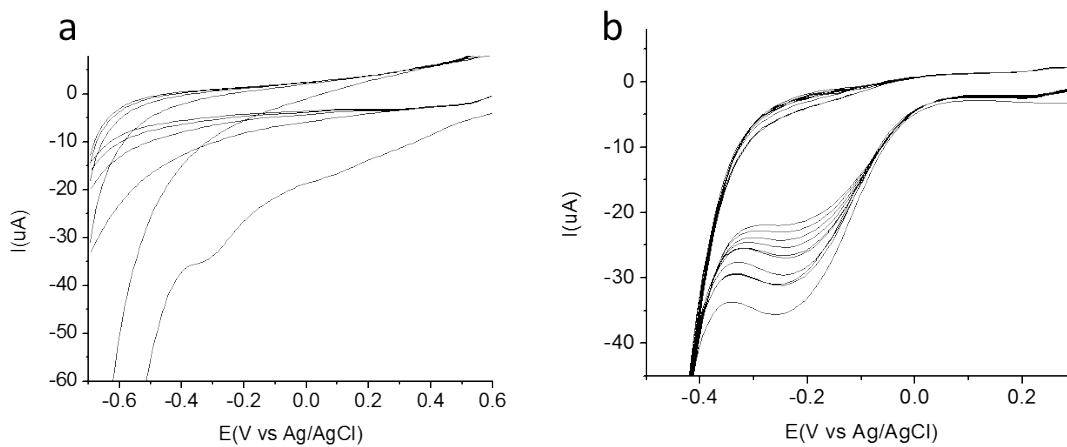


Figure S3. CVs of carbon (a) and gold (b) substrates in deaerated 0.5 M HCl containing 4mM of PPD and 1 equivalent of NaNO₂. Scan rate was 50 mV/s.

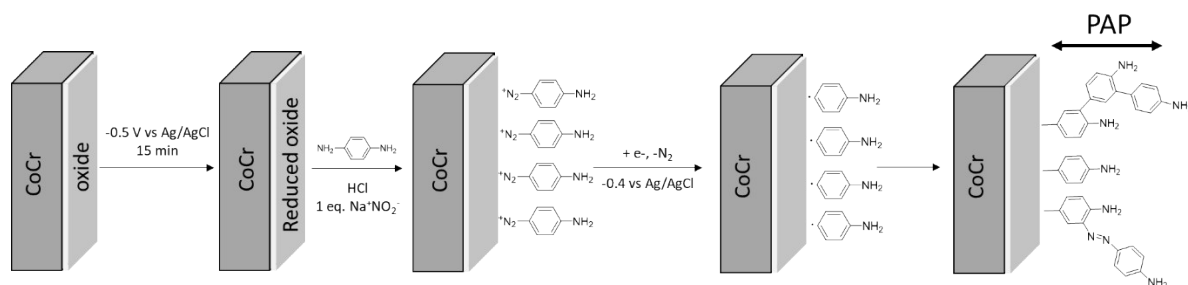


Figure S4. Schematic illustration of the strategy of modification of surfaces by electrochemical reduction of diazonium salts.

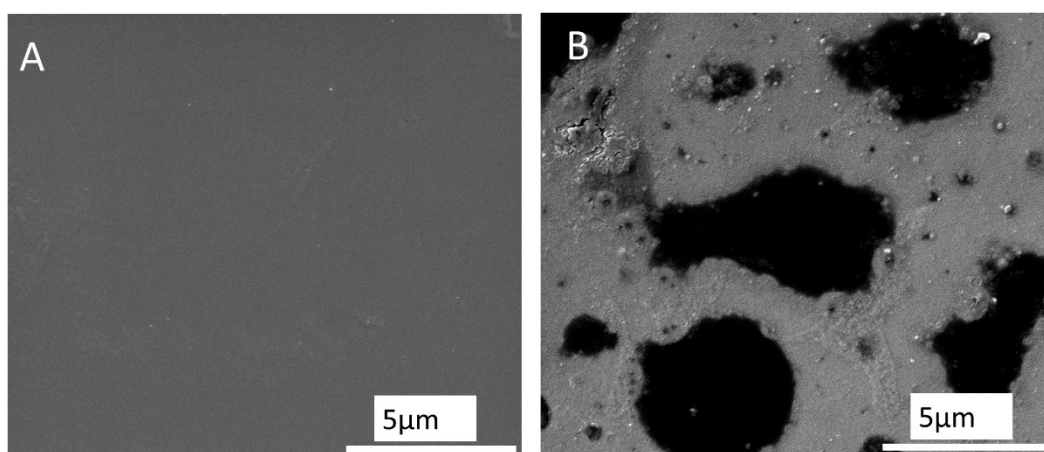


Figure S5. SEM images of CoCr (A) and CoCr_{0.5v} after coating with PAP (B).

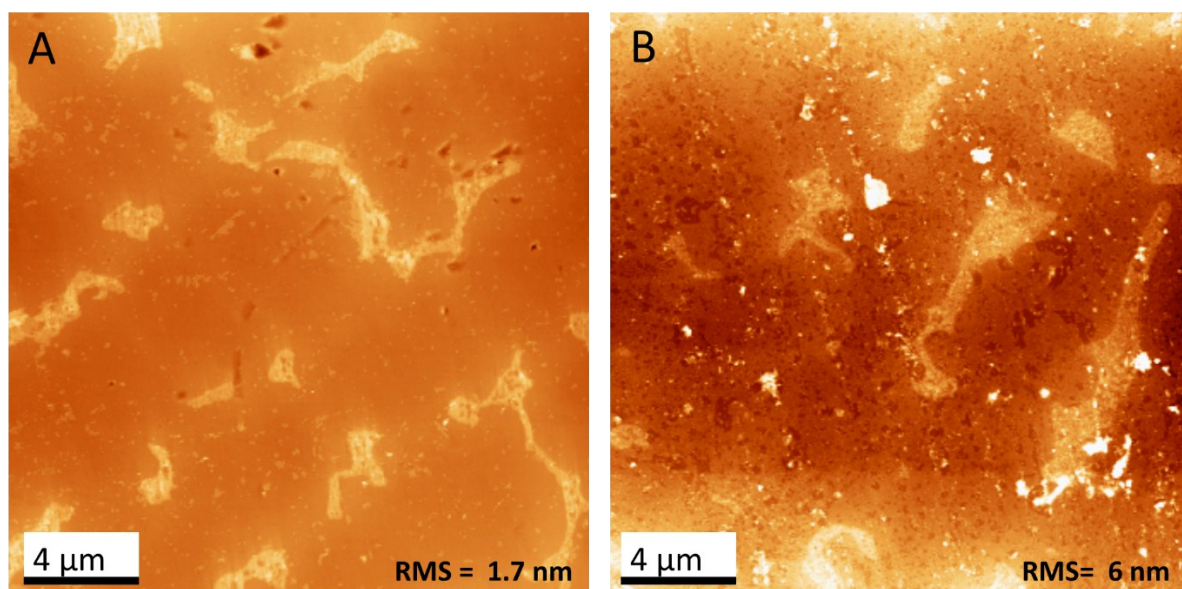


Figure S6. AFM images of CoCr (A) and CoCr_{0.5v} after coating with PAP (B). Root mean square (RMS) roughness is reported in both images.

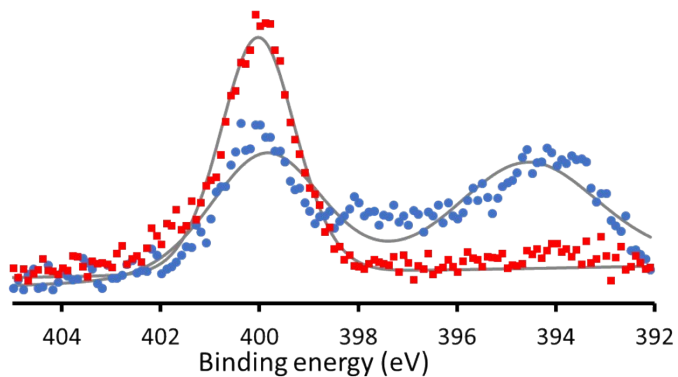


Figure S7. High-resolution N 1s XPS spectra of CoCr_{0.5V} before (blue) and after modification with PAP (red).

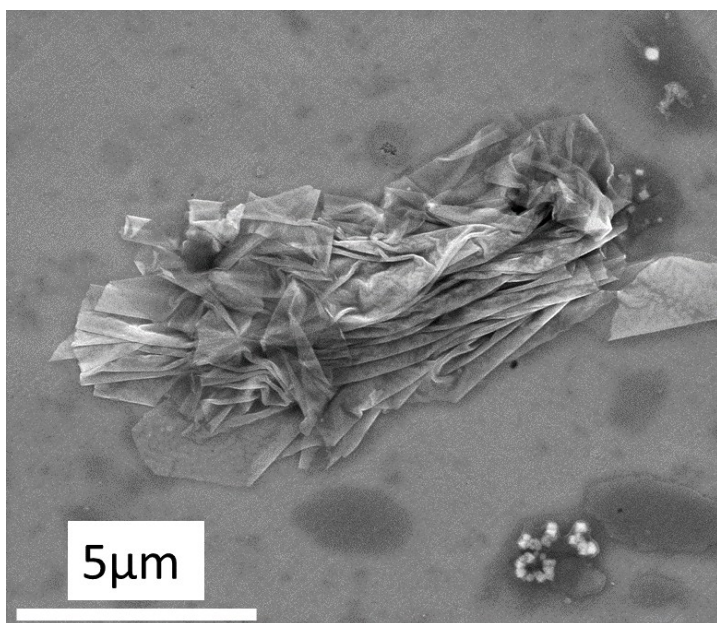


Figure S8. SEM image of the PAP coated film showing residues of PMMA after detaching the PMMA coating during tensile measurement.