

## Supporting Information

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## Supplementary Figures

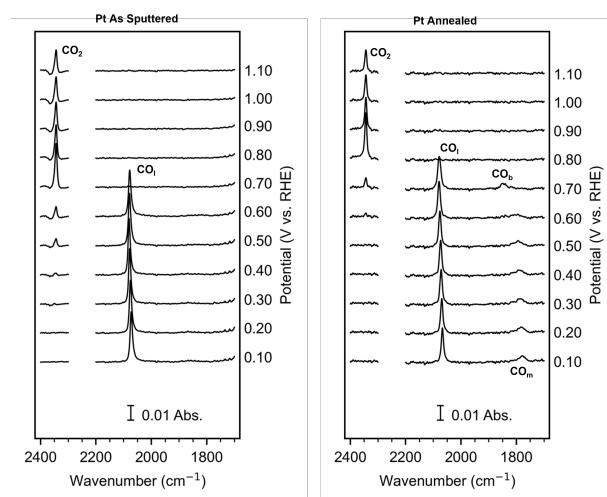


Figure S1: In Situ FTIR spectra of Pt as sputtered (left) and Pt annealed (right) samples. Collected in 0.5M sulfuric acid Ar purged electrolyte during CO stripping. Reference potential 1.2 V vs. RHE.

Table S1:  $H_{upd}$  and CO charge Ratios for listed samples

Sample	$H_{upd}$ ( $\mu$ C)	CO ( $\mu$ C)	Ratio
Pt3Co Skeleton	192	390	1.01
Pt3Co Skin	107	336	1.57
Pt3Ni Skeleton	256	534	1.04
Pt3Ni Skin	116	357	1.54
Pt(111)	184	385	1.04

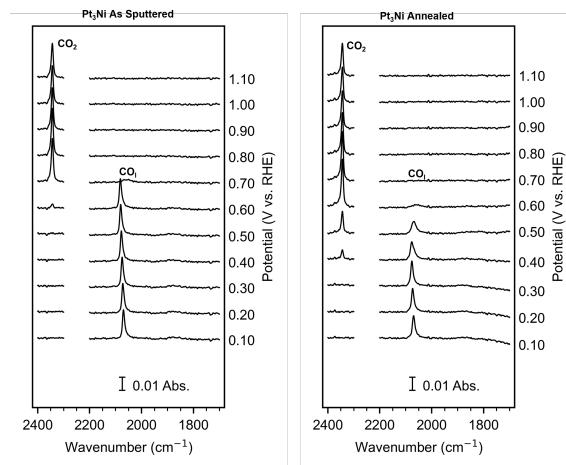


Figure S2: In Situ FTIR spectra of  $\text{Pt}_3\text{Ni}$  as sputtered (left) and  $\text{Pt}_3\text{Ni}$  annealed (right) samples. Collected in 0.5M sulfuric acid Ar purged electrolyte during CO stripping. Reference potential 1.2 V vs. RHE.

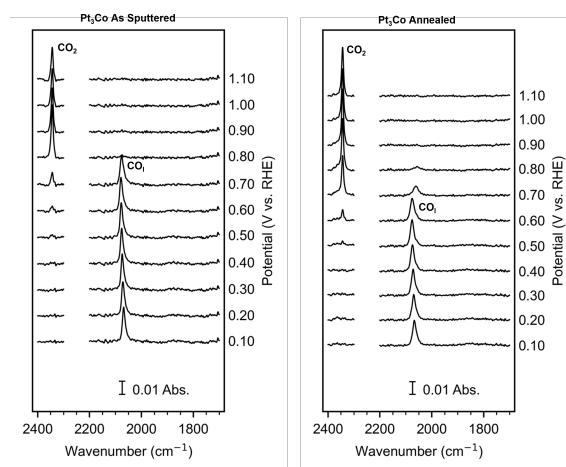


Figure S3: In Situ FTIR spectra of  $\text{Pt}_3\text{Co}$  as sputtered (left) and  $\text{Pt}_3\text{Co}$  annealed (right) samples. Collected in 0.5M sulfuric acid Ar purged electrolyte during CO stripping. Reference potential 1.2 V vs. RHE.

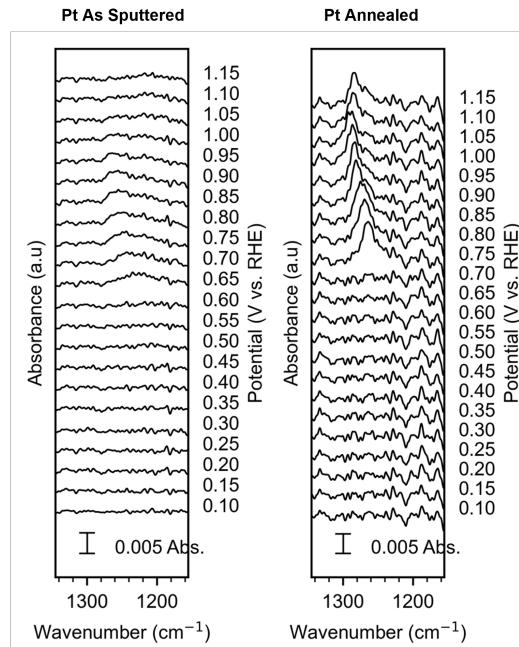


Figure S4: In Situ FTIR sulfate band spectra of Pt as sputtered (left) and Pt annealed (right) samples. Collected in 0.5M sulfuric acid Ar purged electrolyte during CO stripping. Reference potential 1.2 V vs. RHE.

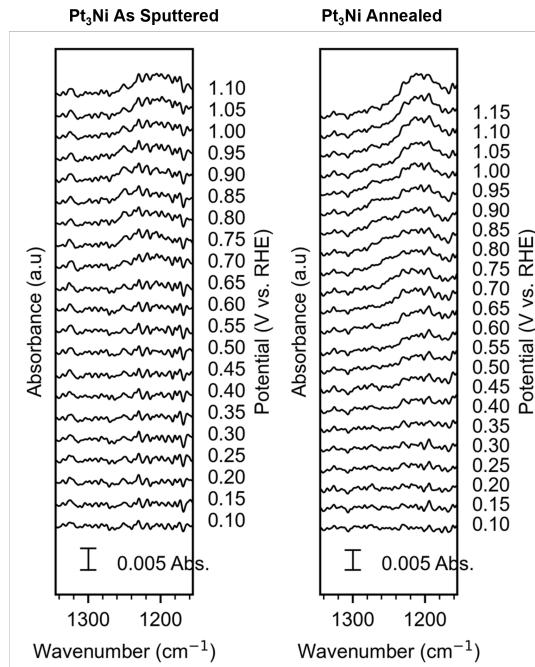


Figure S5: In Situ FTIR sulfate band spectra of Pt<sub>3</sub>Ni as sputtered (left) and Pt<sub>3</sub>Ni annealed (right) samples. Collected in 0.5M sulfuric acid Ar purged electrolyte during CO stripping. Reference potential 1.2 V vs. RHE.

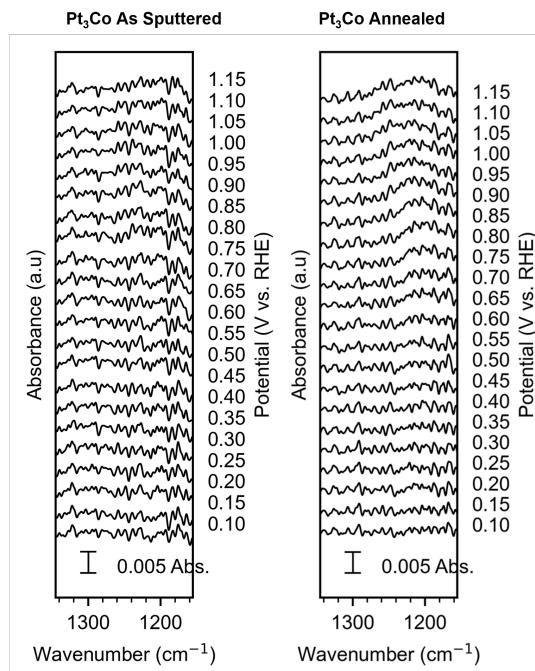


Figure S6: In Situ FTIR sulfate band spectra of  $\text{Pt}_3\text{Co}$  as sputtered (left) and  $\text{Pt}_3\text{Co}$  annealed (right) samples. Collected in 0.5M sulfuric acid Ar purged electrolyte during CO stripping. Reference potential 1.2 V vs. RHE.