

Investigation of electrocatalytic oxygen evolution reaction (OER) selectivity against methanol oxidation on stainless steel

Dr. P. Esakki Karthik^{1*} Prof. Luigi Sangaletti², Prof. Matteo Ferroni^{3,4,5},
and Prof. Ivano Alessandri^{5,6,7}

¹*Research Institute for Sustainable Energy, TCG-CREST, Sector V, Salt Lake, Kolkata 700091*

²*I-LAMP and Department of Mathematics and Physics, Università Cattolica del Sacro Cuore, via della Garzetta 48, 25133 Brescia, Italy*

³*Department of Civil, Environmental, Architectural Engineering and Mathematics (DICATAM), Università degli Studi di Brescia, 25123 Brescia, Italy*

⁴*CNR-IMM Bologna, 40129 Bologna, Italy*

⁵*INO-CNR, 25123 Brescia, Italy*

⁶*INSTM, UdR of Brescia, 25123 Brescia, Italy*

⁷*Department of Information Engineering (DII) University of Brescia, 25123 Brescia, Italy*

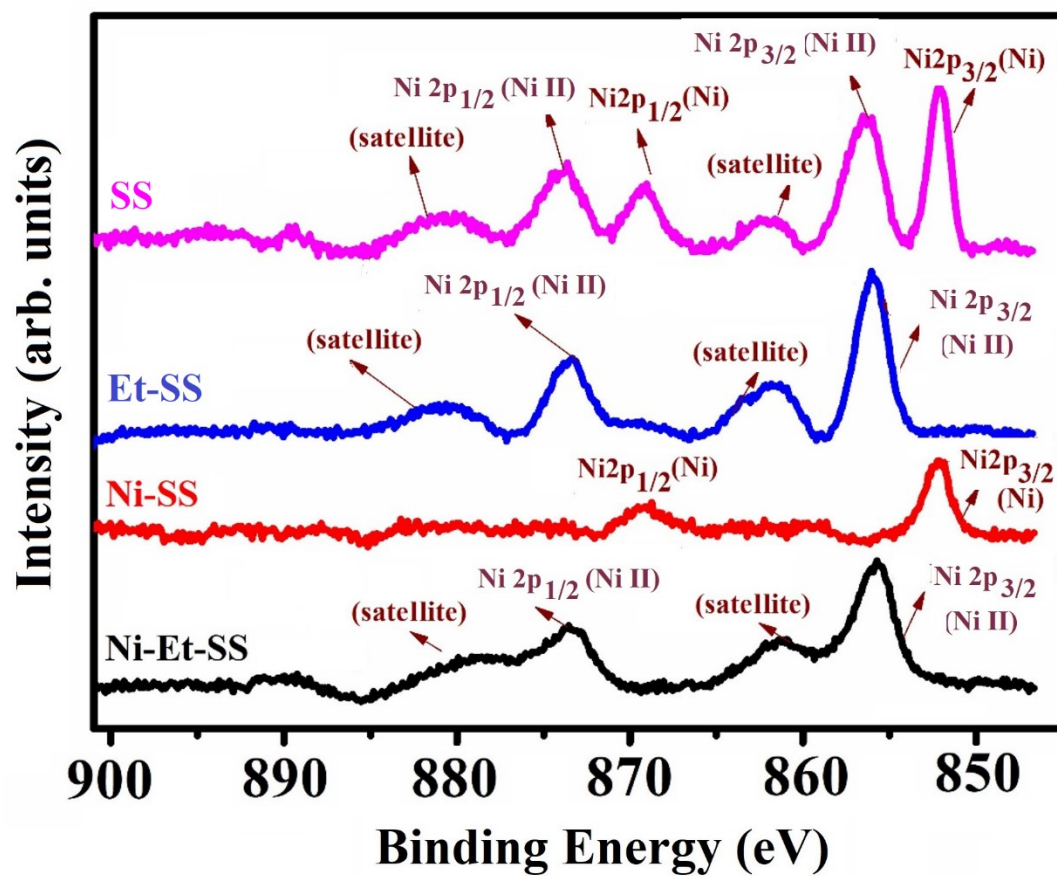


Figure S1. Ni XPS elemental scan on various substrates.

From top to bottom: SS, Et-SS, Ni-SS, and Ni-Et-SS

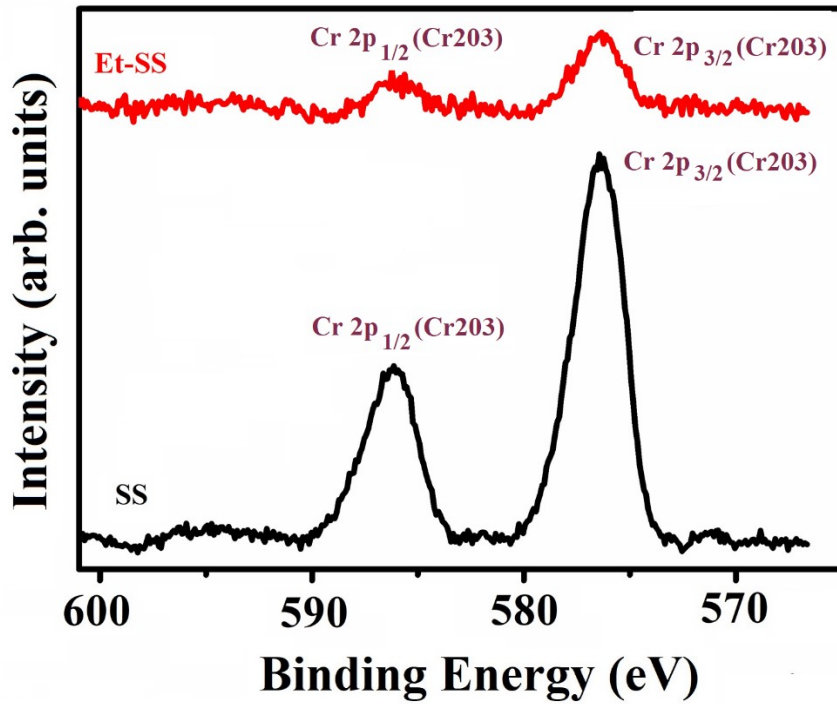


Figure S2. Cr 2p XPS scan of austenite steel before (SS) and after (Et-SS) electrochemical reaction.

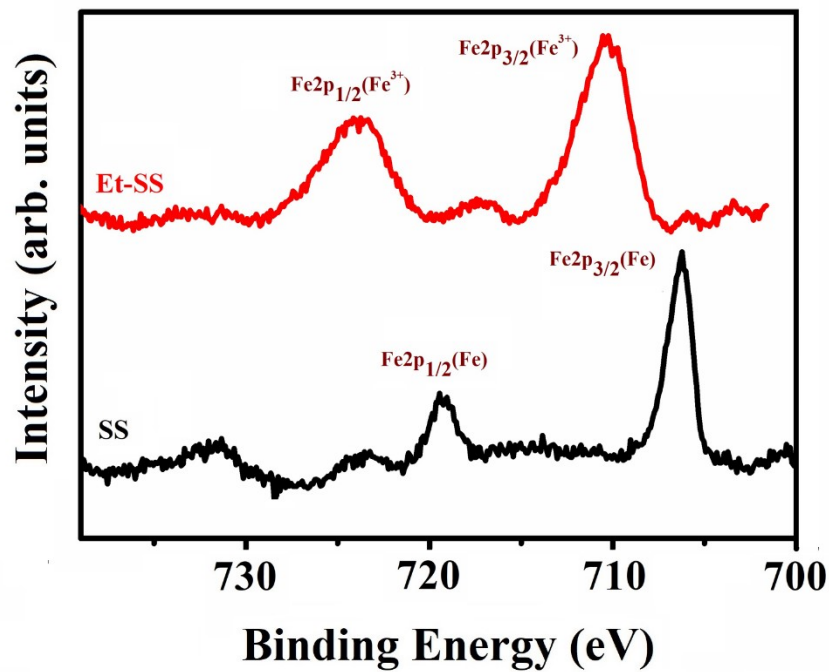


Figure S3. Fe 2p XPS scan of austenite steel before (SS) after (Et-SS) electrochemical reaction.

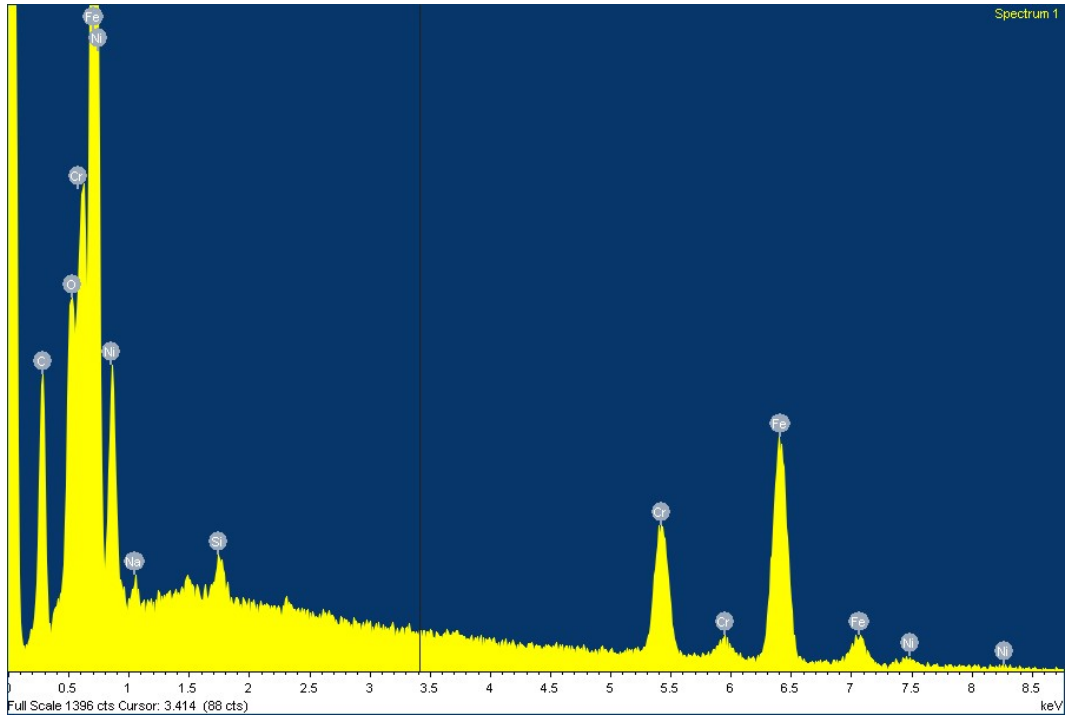


Figure S4. EDAX spectrum of austenite-SS.

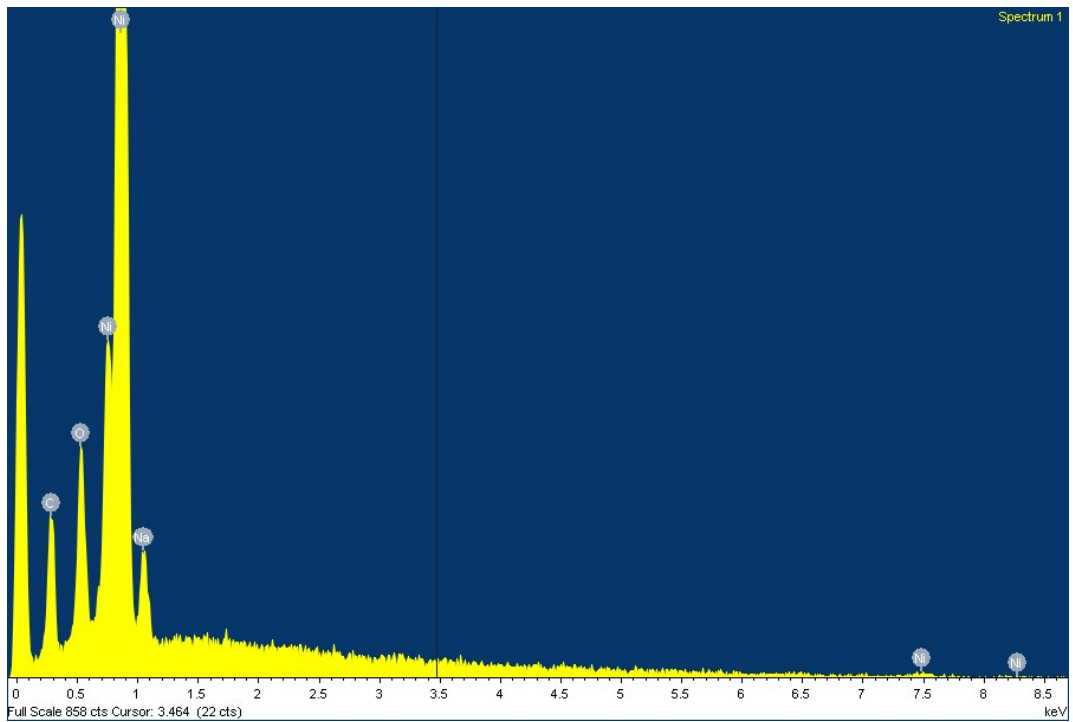


Figure S5. EDAX spectrum of nickel deposited austenite Ni-SS.

Table S1. Elemental composition form EDAX spectrum of the samples

S.No.	Sample	Elements (%)		
		Fe	Ni	Cr
1.	Pristine SS	35	30	24
2.	Ni deposited SS	-	94	-

Since the carbon and oxygen elements are present in both samples, the remaining percentage will be considered as carbon oxygen elements