

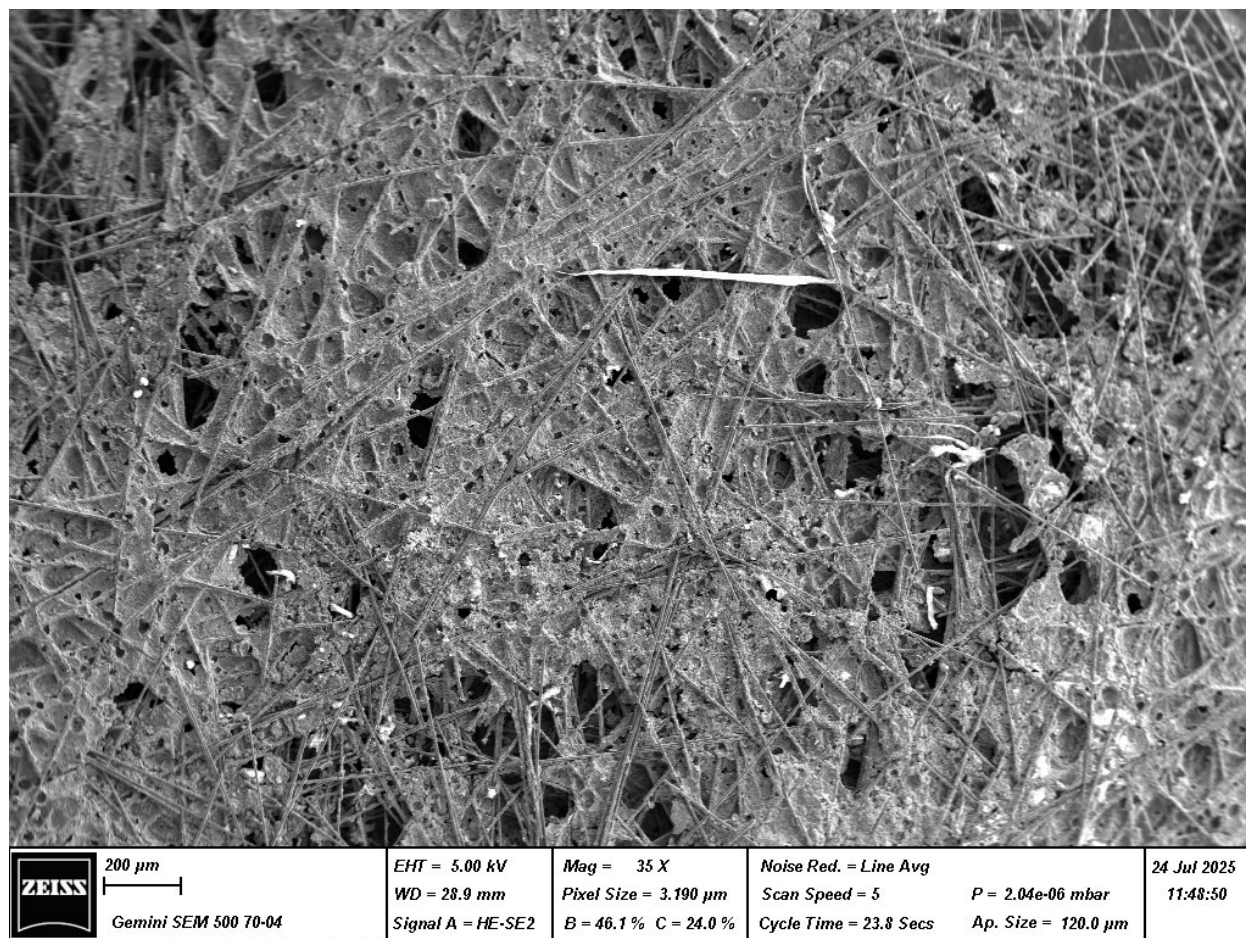
Nanocomposite Electrodes with CuFe Layered Double Hydroxides and Hydrochar for Alkaline HER and HOR: A Multifunctional Platform for Hydrogen Electrocatalysis

Michelle Saliba^{a,b}, Philippe Knauth^a, Emily Bloch^a, Luca Pasquini^a, Emanuela Sgreccia^b, Riccardo Narducci^b, Alessandra Varone^b, and Maria Luisa Di Vona^b

^a*Aix Marseille Univ, CNRS, MADIREL (UMR 7246) and International Laboratory: Ionomer Materials for Energy, Campus St Jérôme, 13013 Marseille, France*

^b*University of Rome Tor Vergata, Dep. Industrial Engineering and International Laboratory: Ionomer Materials for Energy, 00133 Roma, Italy*

Supplementary information



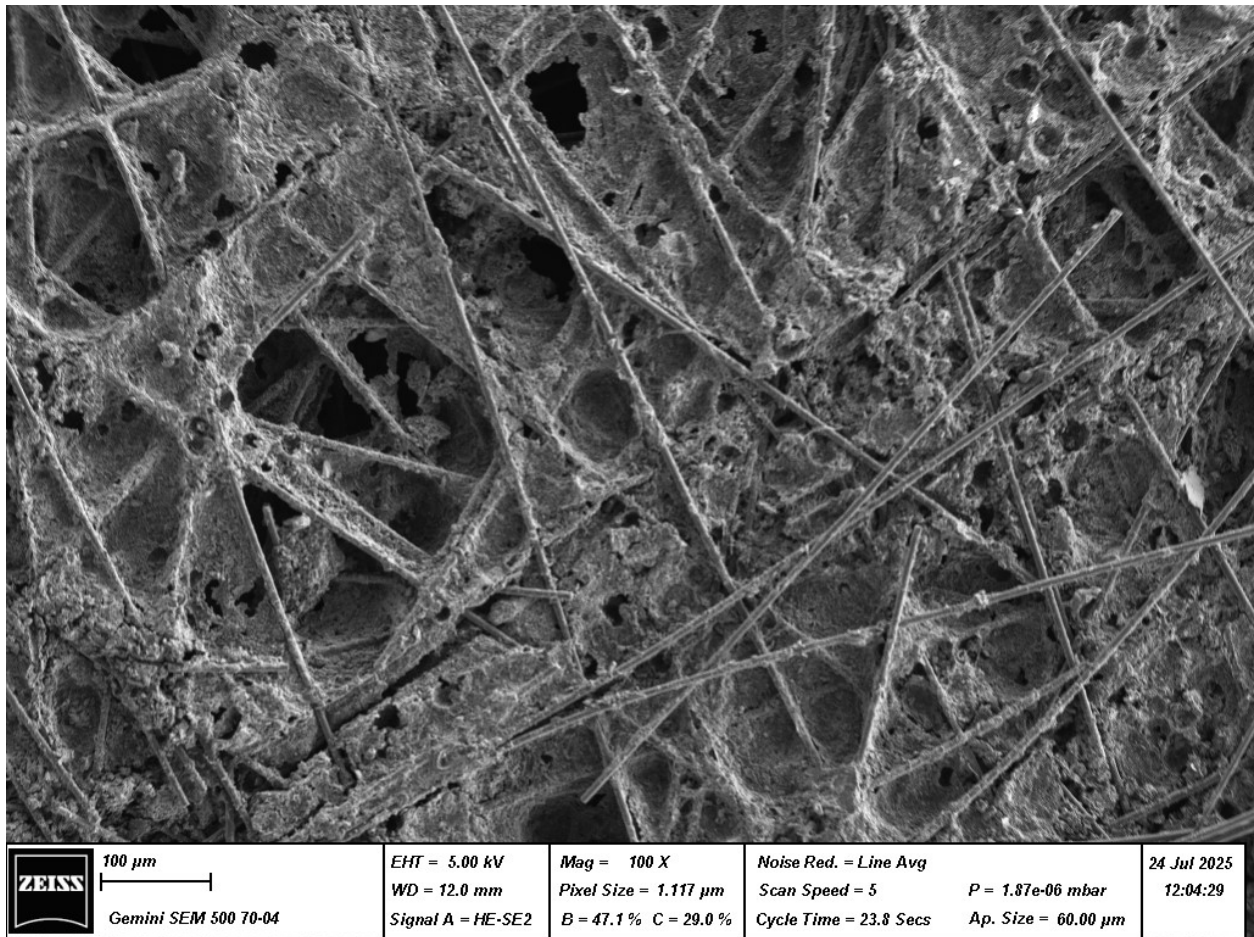
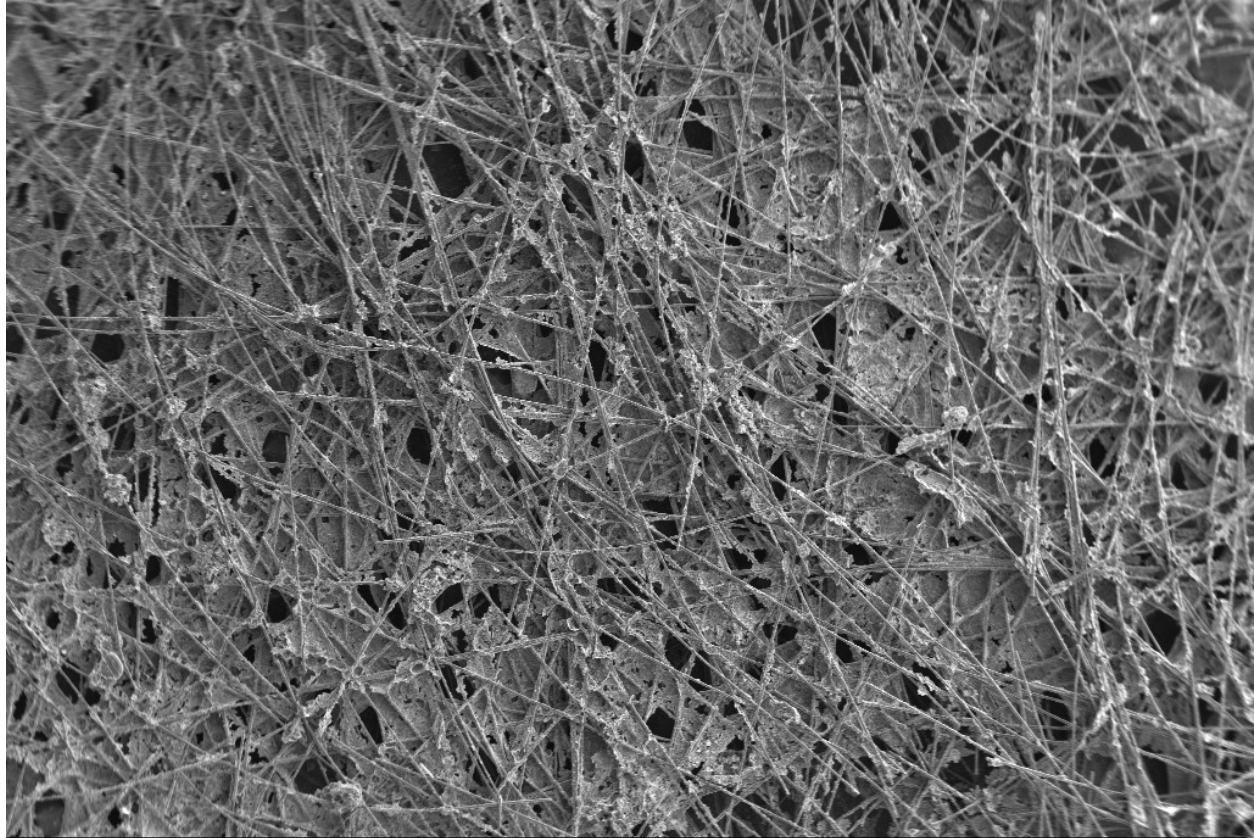


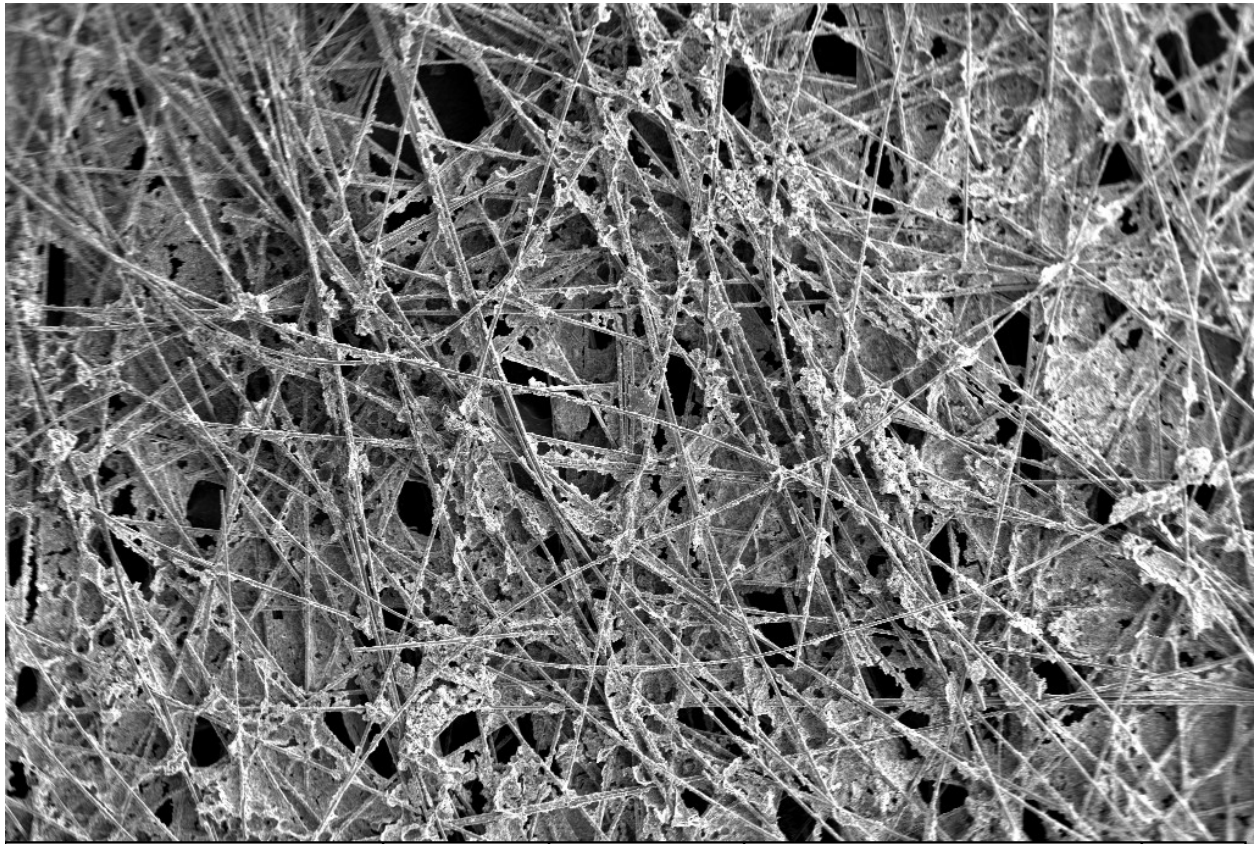




Figure 1. SEM micrographs of LDH-1.5/PPO-LC electrode with different magnifications.



	200 μm  Gemini SEM 500 70-04	EHT = 5.00 kV WD = 28.4 mm Signal A = HE-SE2	Mag = 35 X Pixel Size = 3.190 μm B = 47.2 % C = 23.3 %	Noise Red. = Line Avg Scan Speed = 5 Cycle Time = 23.8 Secs	P = 1.78e-06 mbar Ap. Size = 120.0 μm	24 Jul 2025 12:34:32
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	100 μ m  Gemini SEM 500 70-04	EHT = 5.00 kV WD = 18.8 mm Signal A = HE-SE2	Mag = 50 X Pixel Size = 2.233 μ m B = 44.6 % C = 24.6 %	Noise Red. = Line Avg Scan Speed = 5 Cycle Time = 23.8 Secs	P = 1.37e-06 mbar Ap. Size = 120.0 μ m	24 Jul 2025 12:39:30
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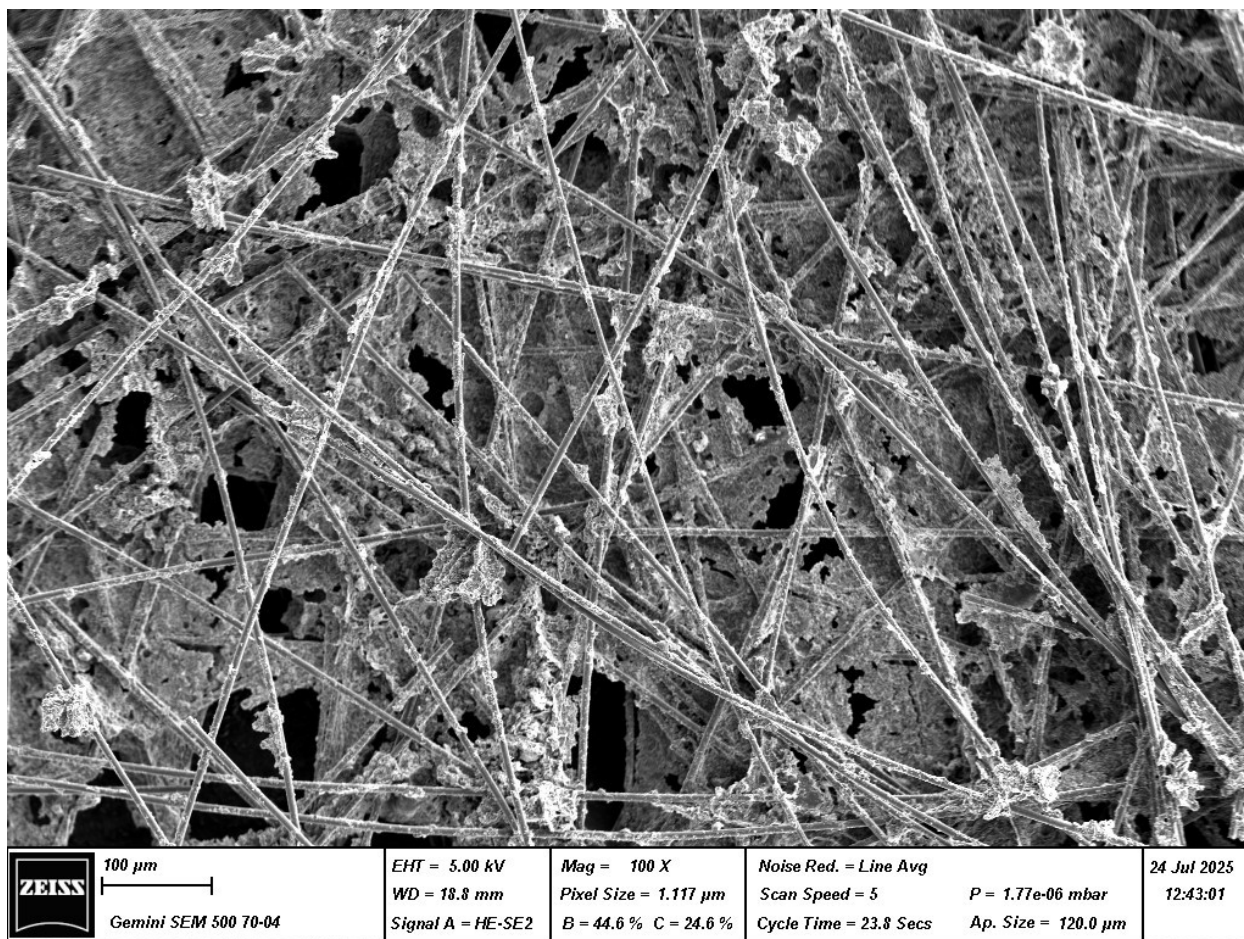


Figure 2. SEM micrographs of LDH-1.5/PPO-LC/Hydrochar electrode with different magnifications.