Supplementary Information

# Printed Dry Electrode for Neuromuscular Electrical Stimulation (NMES) for E-Textile

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AFM Surface Roughness

Table S1: Measurements of surface roughness on different samples of the dry electrode on the printed e-textile.

| Sample 1 | Electrode 1 | Rq | Interface 1 | Rq |
|---|---|---|---|---|
| | 1 | 0,476 | 1 | 0,231 |
| | 2 | 0,23 | 2 | 0,19 |
| | 3 | 0,277 | 3 | 0,196 |
| | 4 | 0,177 | 4 | 0,218 |
| | 5 | 0,215 | 5 | 0,271 |
| | | | | |
| Sample 2 | Electrode 2 | Rq | Interface 2 | Rq |
| | 1 | 0,306 | 1 | 0,203 |
| | 2 | 0,323 | 2 | 0,276 |
| | 3 | 0,356 | 3 | 0,274 |
| | 4 | 0,238 | 4 | 0,213 |
| | 5 | 0,321 | 5 | 0,231 |
| | | | | |
| Sample 3 | Electrode 3 | Rq | Interface 3 | Rq |
| | 1 | 0,295 | 1 | 0,213 |
| | 2 | 0,301 | 2 | 0,198 |
| | 3 | 0,361 | 3 | 0,231 |
| | 4 | 0,345 | 4 | 0,162 |
| | 5 | 0,187 | 5 | 0,187 |
| | | | | |
| Sample 4 | Electrode 4 | Rq | Interface 4 | Rq |
| | 1 | 0,356 | 1 | 0,187 |
| | 2 | 0,398 | 2 | 0,201 |
| | 3 | 0,361 | 3 | 0,197 |
| | 4 | 0,291 | 4 | 0,156 |
| | 5 | 0,305 | 5 | 0,231 |
| | | | | |
| Sample 5 | Electrode 5 | Rq | Interface 5 | Rq |
| | 1 | 0,299 | 1 | 0,232 |
| | 2 | 0,312 | 2 | 0,237 |
| | 3 | 0,371 | 3 | 0,325 |

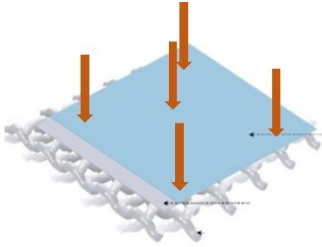| | 4 | 0,358 | 4 | 0,189 |
| --- | --- | --- | --- | --- |
| | 5 | 0,311 | 5 | 0,199 |



Figure S1: Schematic depicting the 5 different points chosen on the printed dry electrode for AFM measurements.
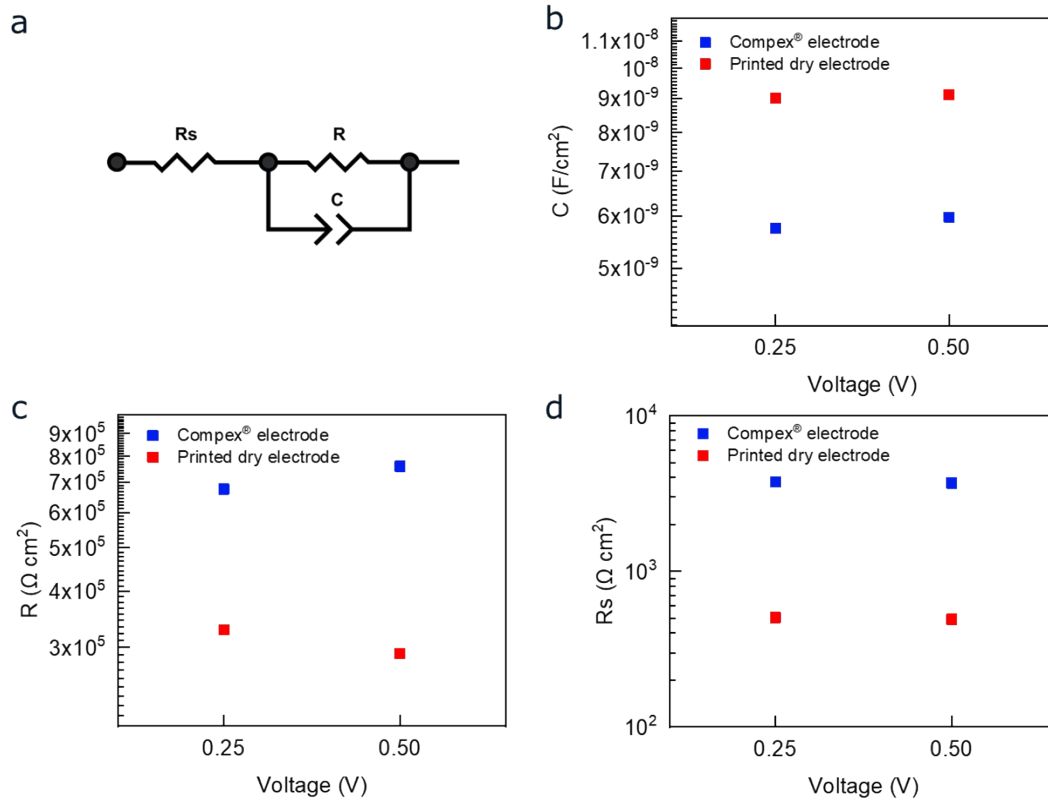
Electrochemical Impedance Spectroscopy (EIS)



Figure S2: a) The equivalent circuit model used to fit the EIS. Fitted parameters for b) interfacial capacitance, C; c) interfacial resistance, R and d) series resistance, $R_s$.