

Electronic Supplementary Information

Quantitative analysis of the coupling between proton and electron transport in peptide/manganese oxide hybrid films

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Supporting figures (Figure S1~S3)

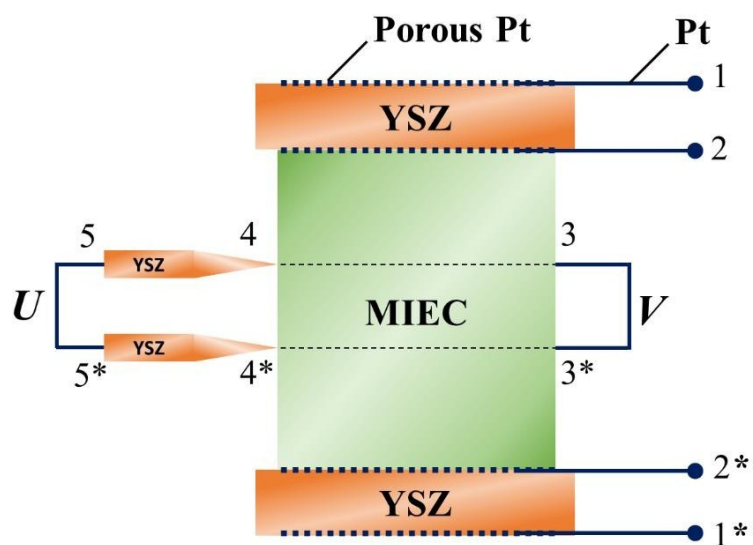


Figure S1. Schematic of MIECs experimental setup to get transport parameters. Flowing a current between 2 and 2* achieves ion blocking mode while flowing a current between 1 and 1* makes electron blocking mode. The electron and oxygen vacancy's electrochemical potentials are measured as V (between 3 and 3*) and U (between 4 and 4*), respectively.

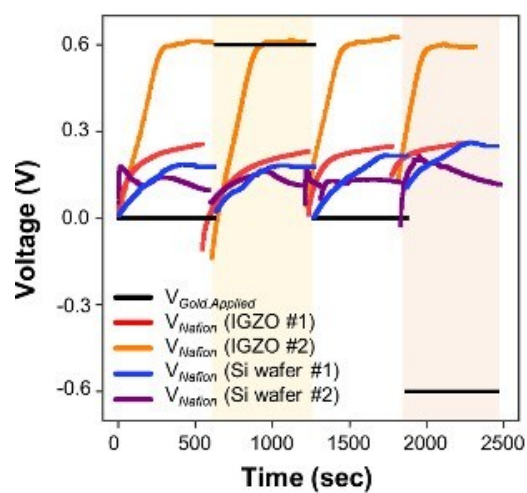


Figure S2. Voltages measured from the Nafion electrodes of samples made with semiconductor substrates. The variation of the Nafion voltages are observed in every experiment, but the overall shift is maintained throughout the whole measurement regardless of on/off of gold voltage.

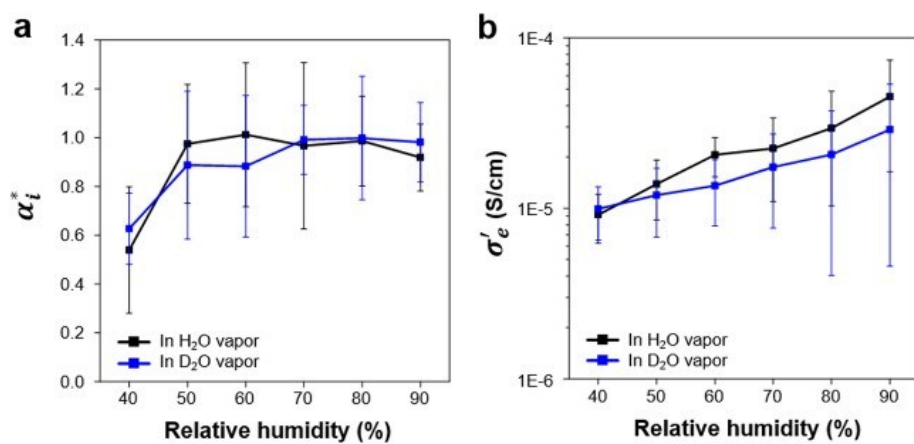


Figure S3. Transport parameters of the hybrid film humidified with each H₂O (black line) and D₂O (blue line) vapors. a. The transport parameter α_i^* in blue line has a similar value with black line at the wide range of relative humidity. The result demonstrates that significant interference also exists between the conduction of deuterium and electron. b. The transport parameter σ_e' of both differently humidified samples increase with the increasing relative humidity.