Two-Dimensional Ti_3C_2 MXene for High-Resolution Neural Interfaces

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SUPPORTING INFORMATION

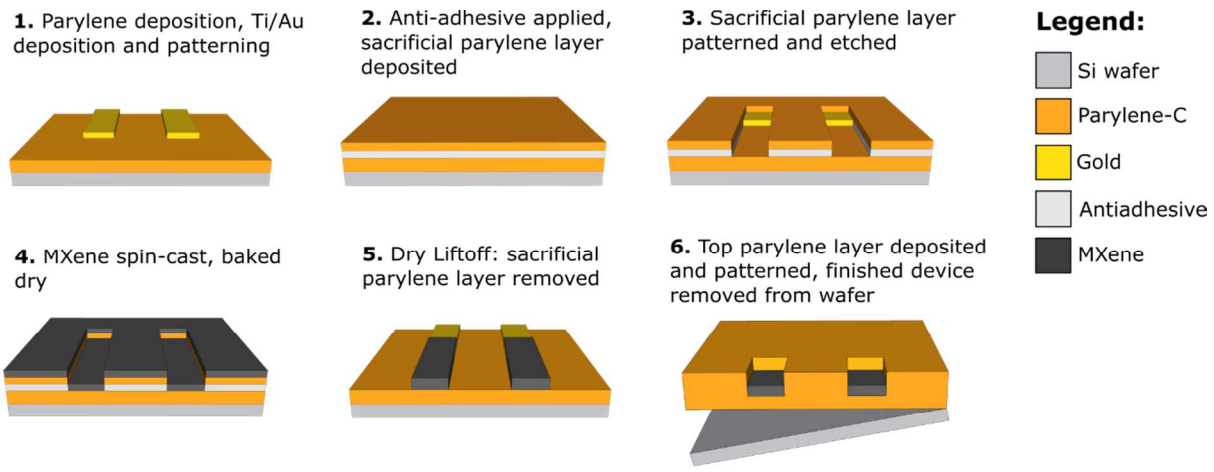

Figure S1. Fabrication of multi-channel Ti_3C_2 neural sensors. Fabrication process: pattern metal traces and connection pads on bottom parylene-C layer; deposit an anti-adhesive layer (1% Micro 90) and a sacrificial parylene-C layer; etch pattern the sacrificial parylene-C layer; spin coat Ti_3C_2 and thoroughly dry; peel up the sacrificial layer, leaving Ti_3C_2 patterns behind; deposit top parylene-C layer; pattern and etch open electrode and Au bonding pad contacts; release completed device from wafer.

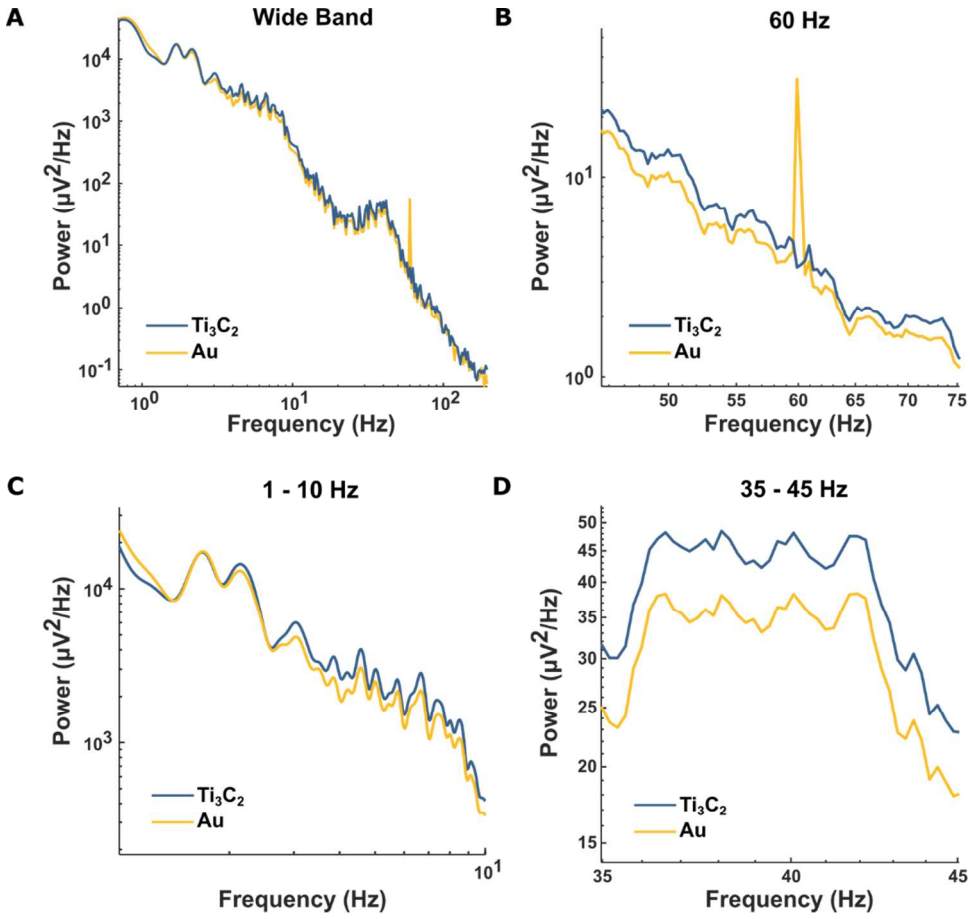

Figure S2. ***In vivo*** **noise characteristics.** (**A**) Wide band power spectral density from representative Ti_3C_2 and Au electrodes from the intracortical array. (**B**) A significant peak in power at 60 Hz, attributed to mains noise, was seen on Au electrodes but was not observed on Ti_3C_2 electrodes. (C,D) Ti_3C_2 electrodes recorded higher power across a broadf range of frequencies, including 1-10 Hz delta and theta rhythms (**C**) and 35-45 Hz gamma rhythms (**D**).