

Analyte sensor and fabrication thereof**ABSTRACT**

5 According to one aspect of the invention, there is provided an analyte sensor comprising a passivation layer comprising at least one nano-sized to micro-sized trench for receiving an analyte; an electrode disposed within the at least one nano-sized to micro-sized trench of the passivation layer, the electrode comprising atomically thin electrode materials from any one or more of graphene, derivatives of
10 graphene, silicene, molybdenum disulfide or boron nitride; and a conductive substrate layer having a portion in contact with at least the organic/non-metallic electrode.

Figure 1A