

感測與光觸媒奈米材料實驗室

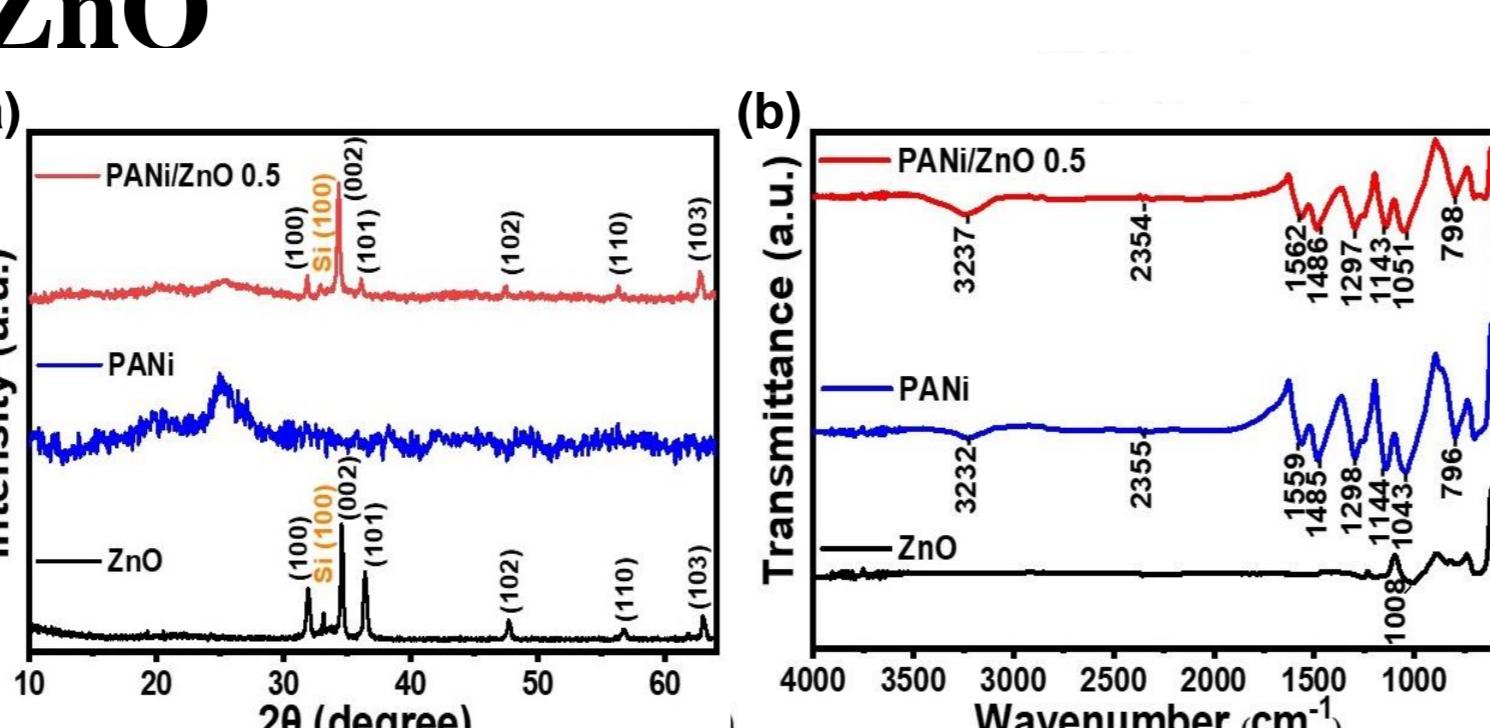
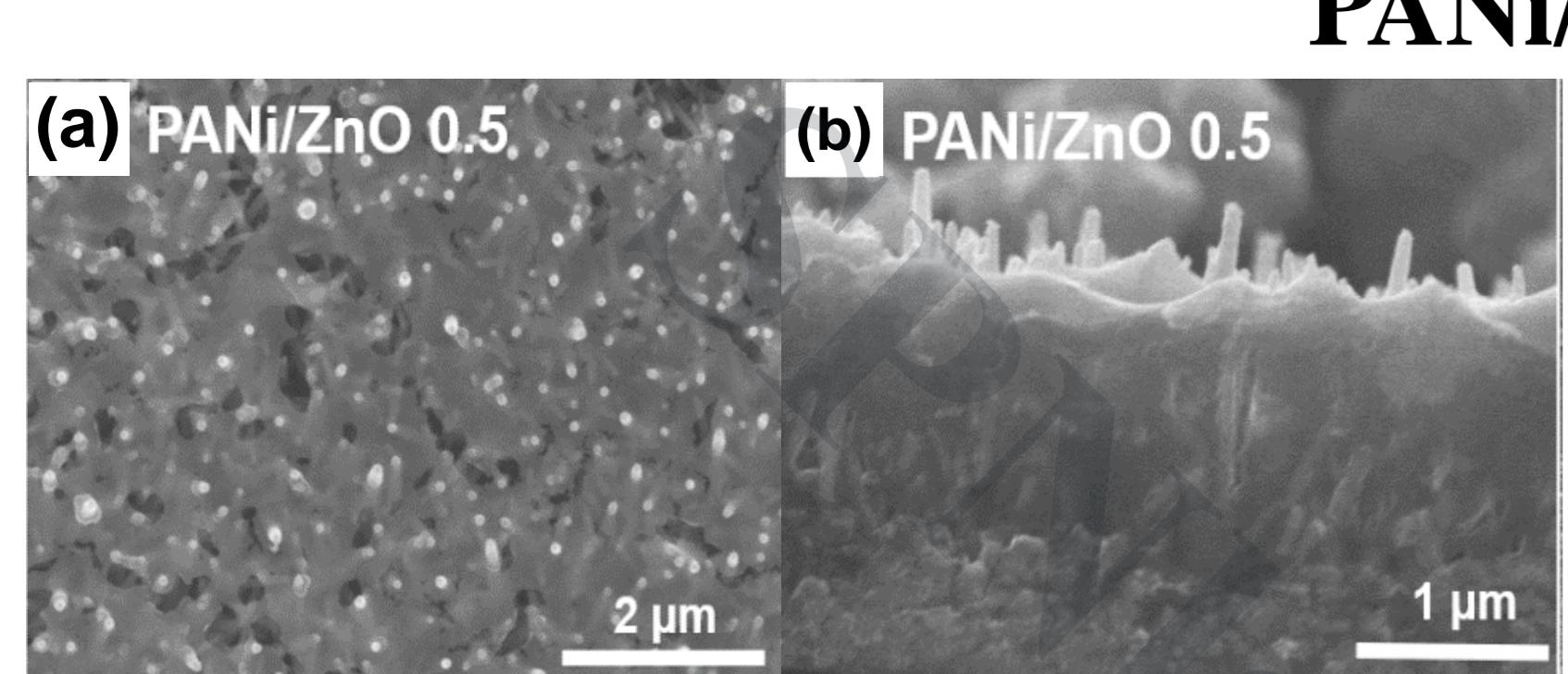
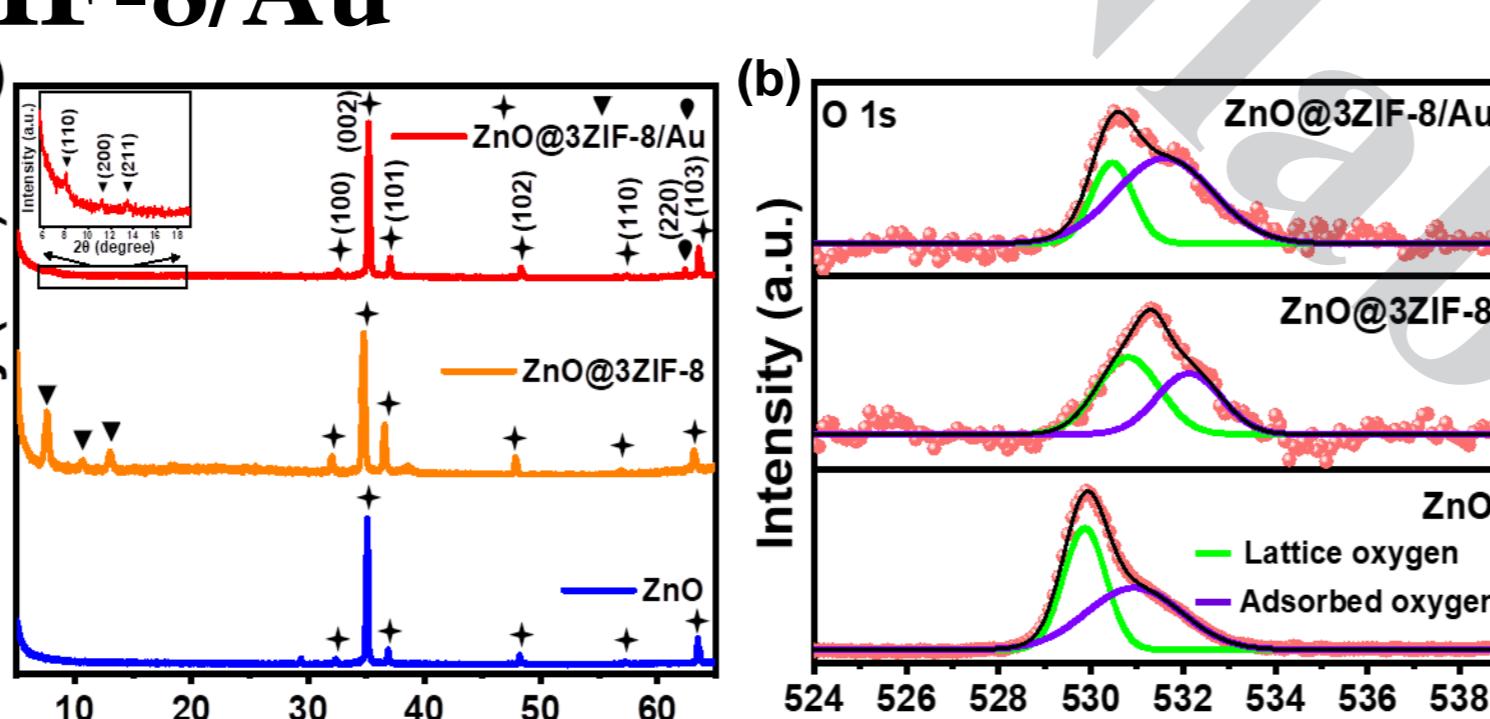
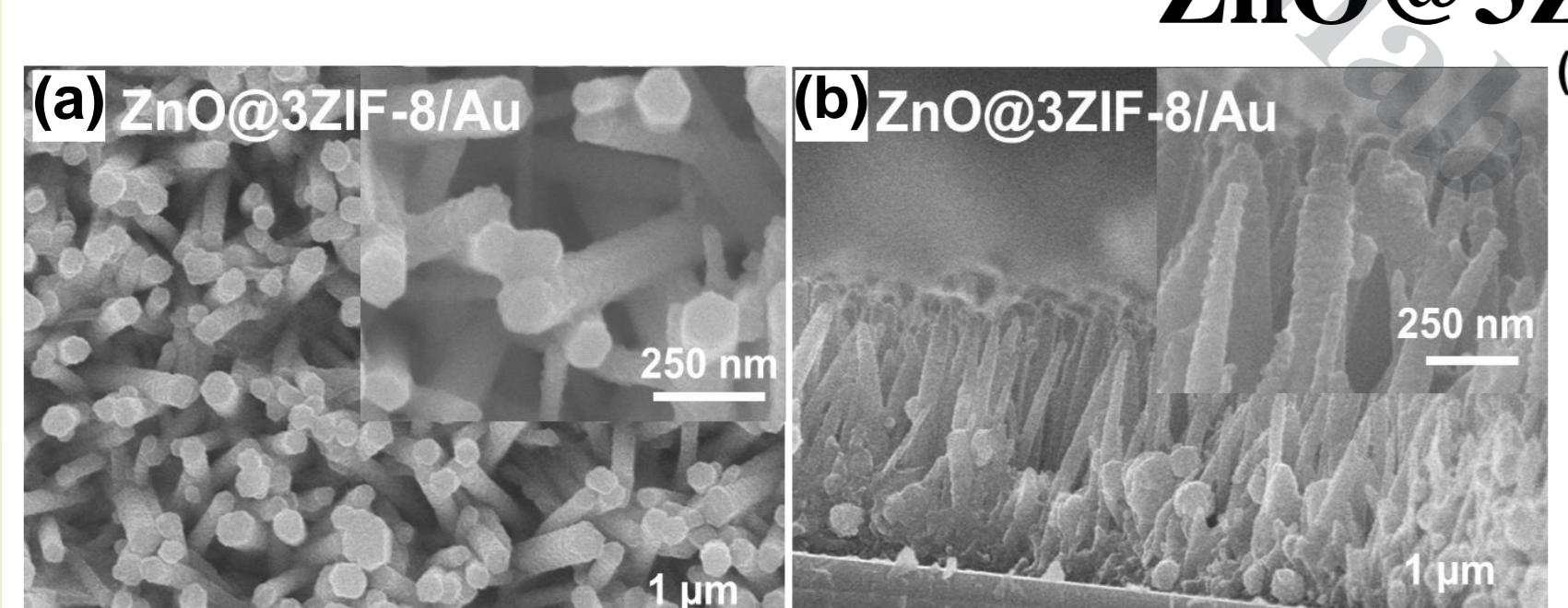
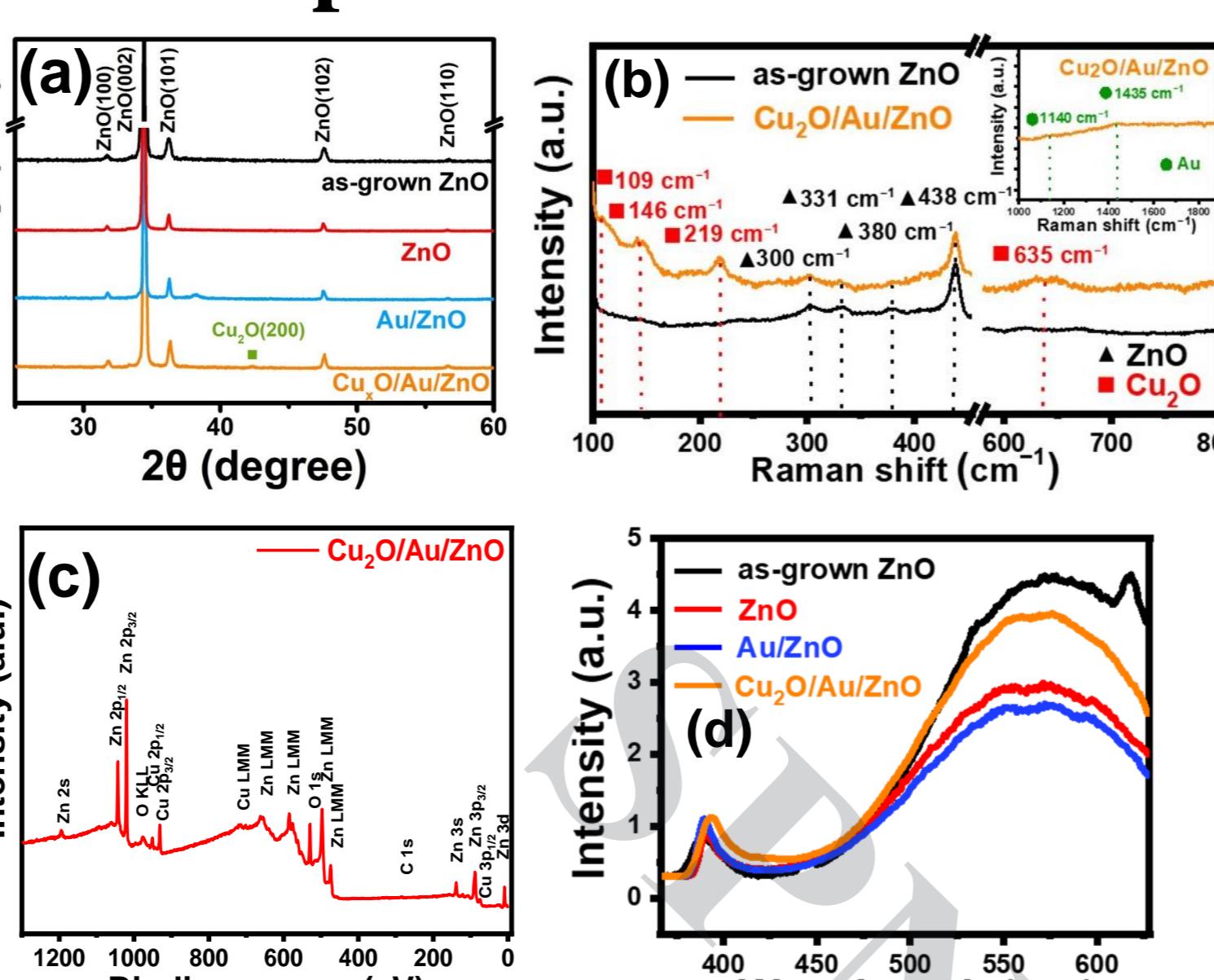
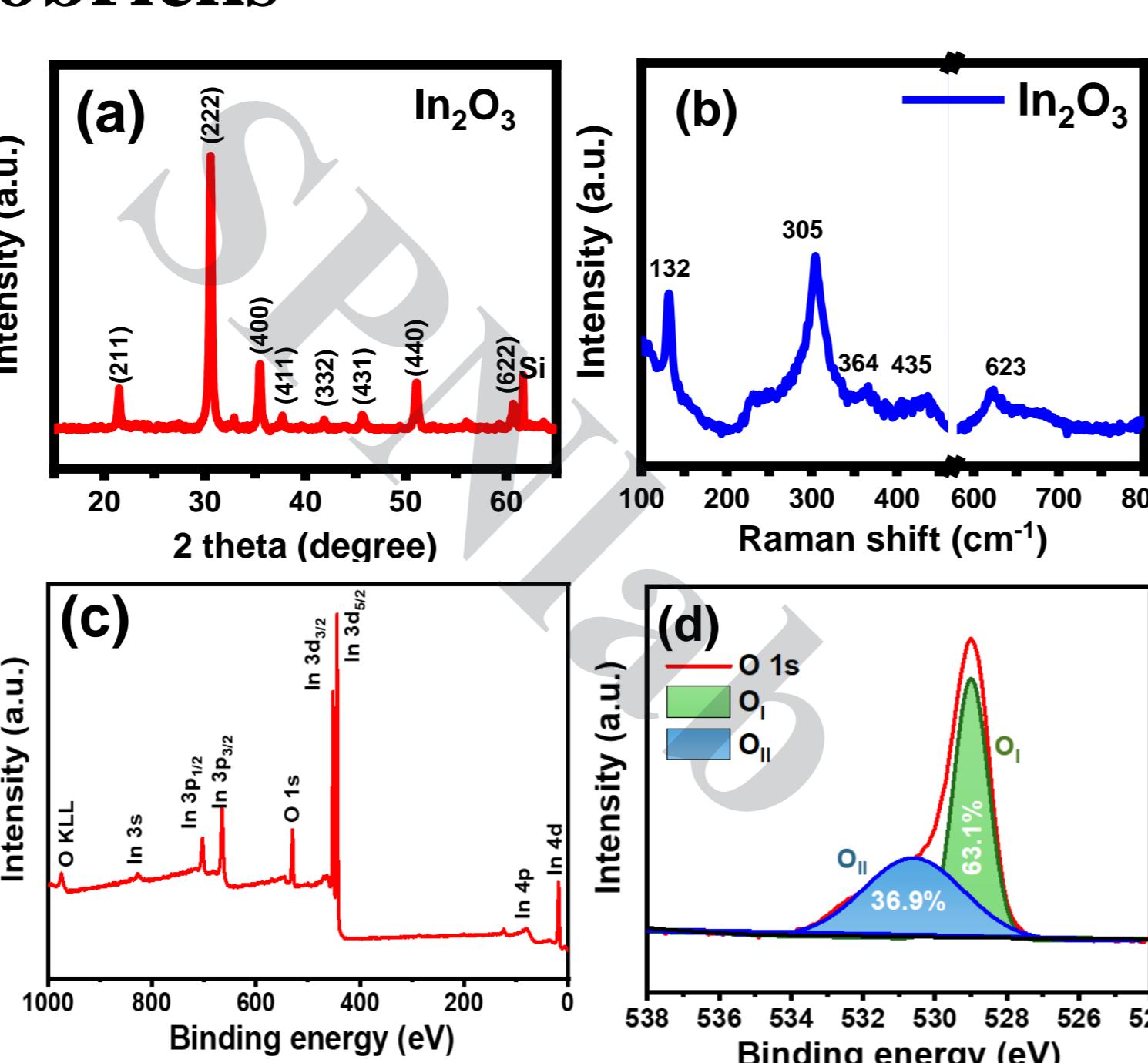
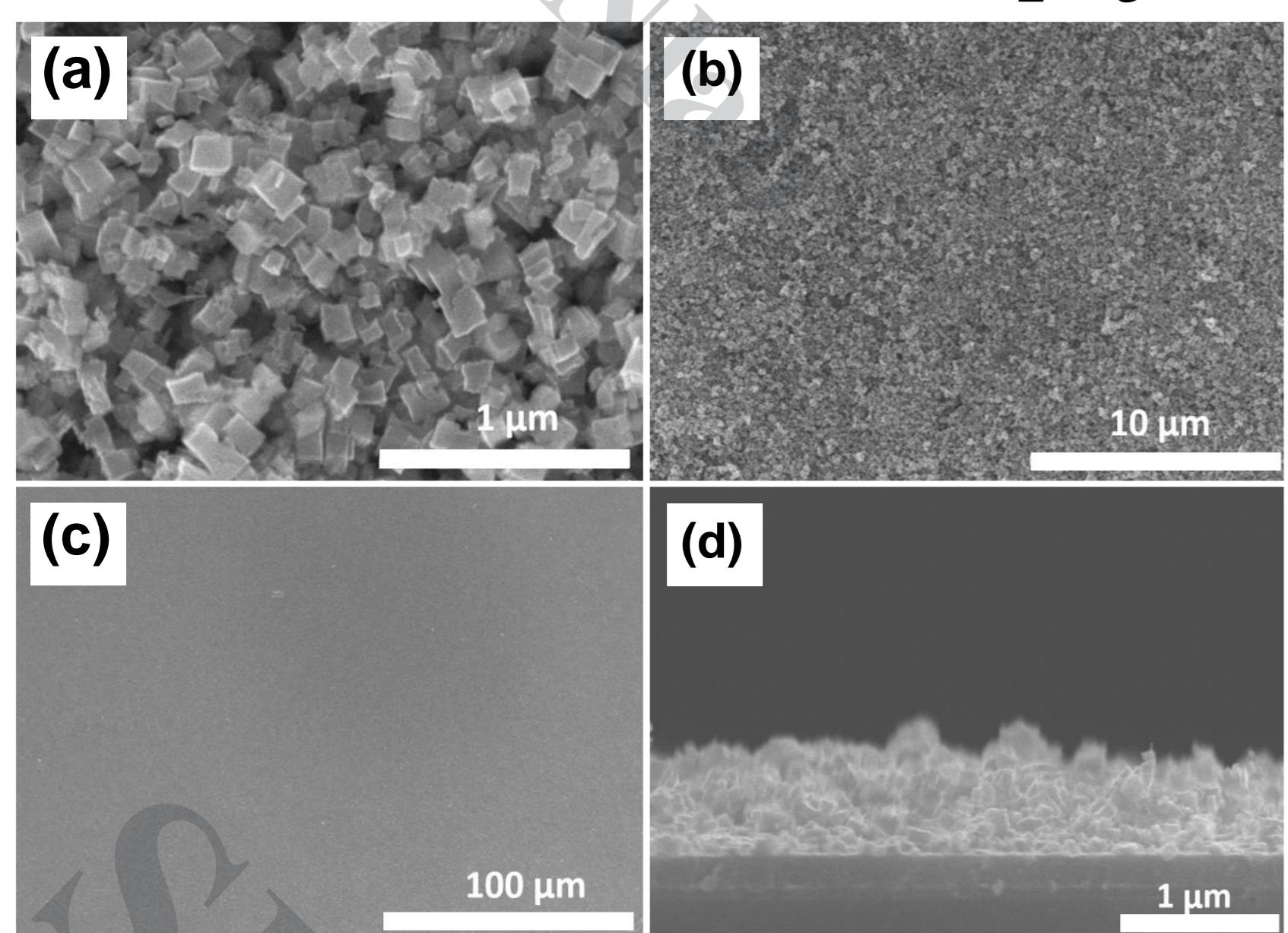
Sensing and Photocatalysis Nanomaterials Laboratory

實驗室：材料實驗館206室

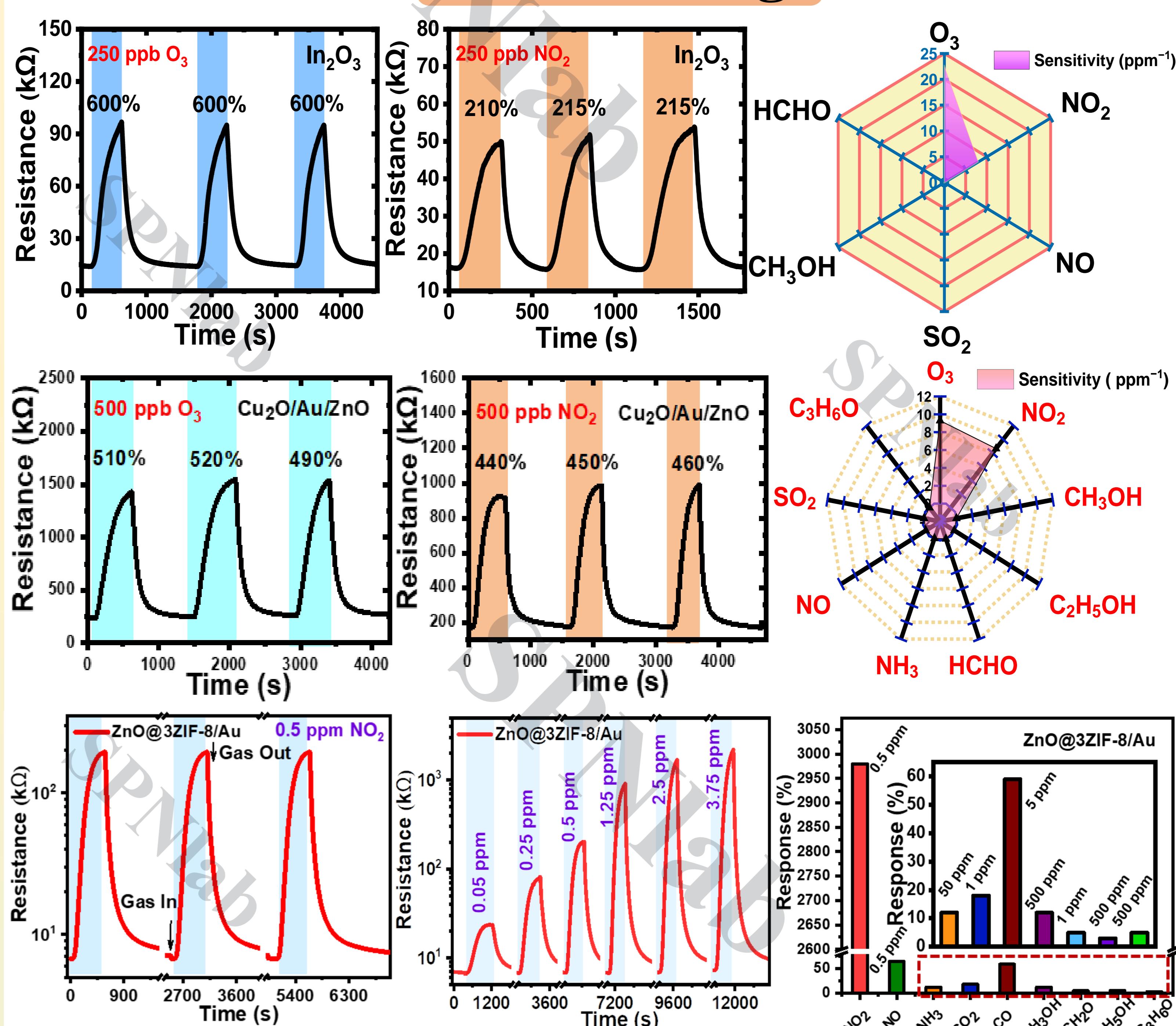
Air pollution is one of the important issues receiving global attention. Realization of compact, highly-sensitive, and reasonably priced gas sensors that are suitable for long-term out-door monitoring is of great significance. Low-cost gas sensors also have tremendous industrial and biomedical applications. Our current research focuses on the synthesis of metal oxide based nanocomposites and the development of relevant technology for portable semiconductor gas sensors. At the present time, the main target gases include ozone, nitrogen oxides, and ammonia.

Materials Characterization

In₂O₃ nanobricks



Gas Sensing

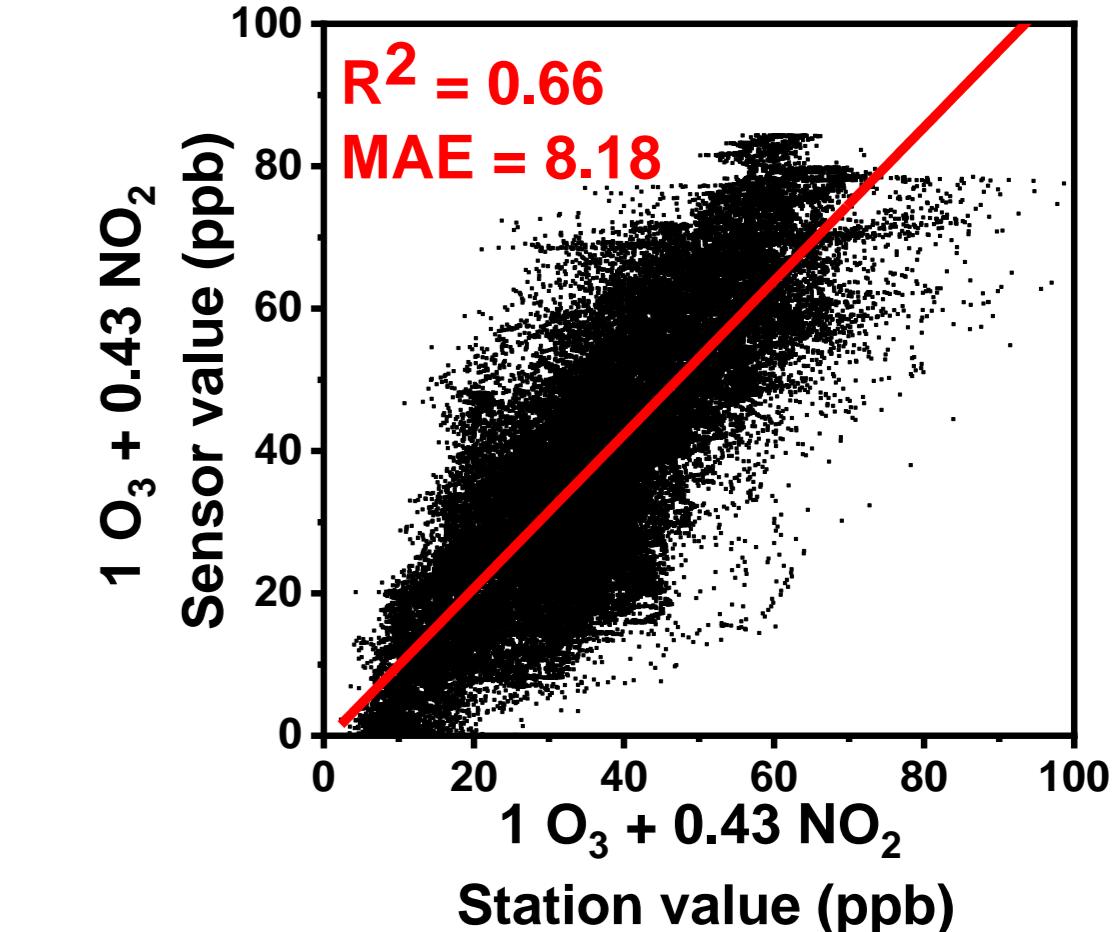
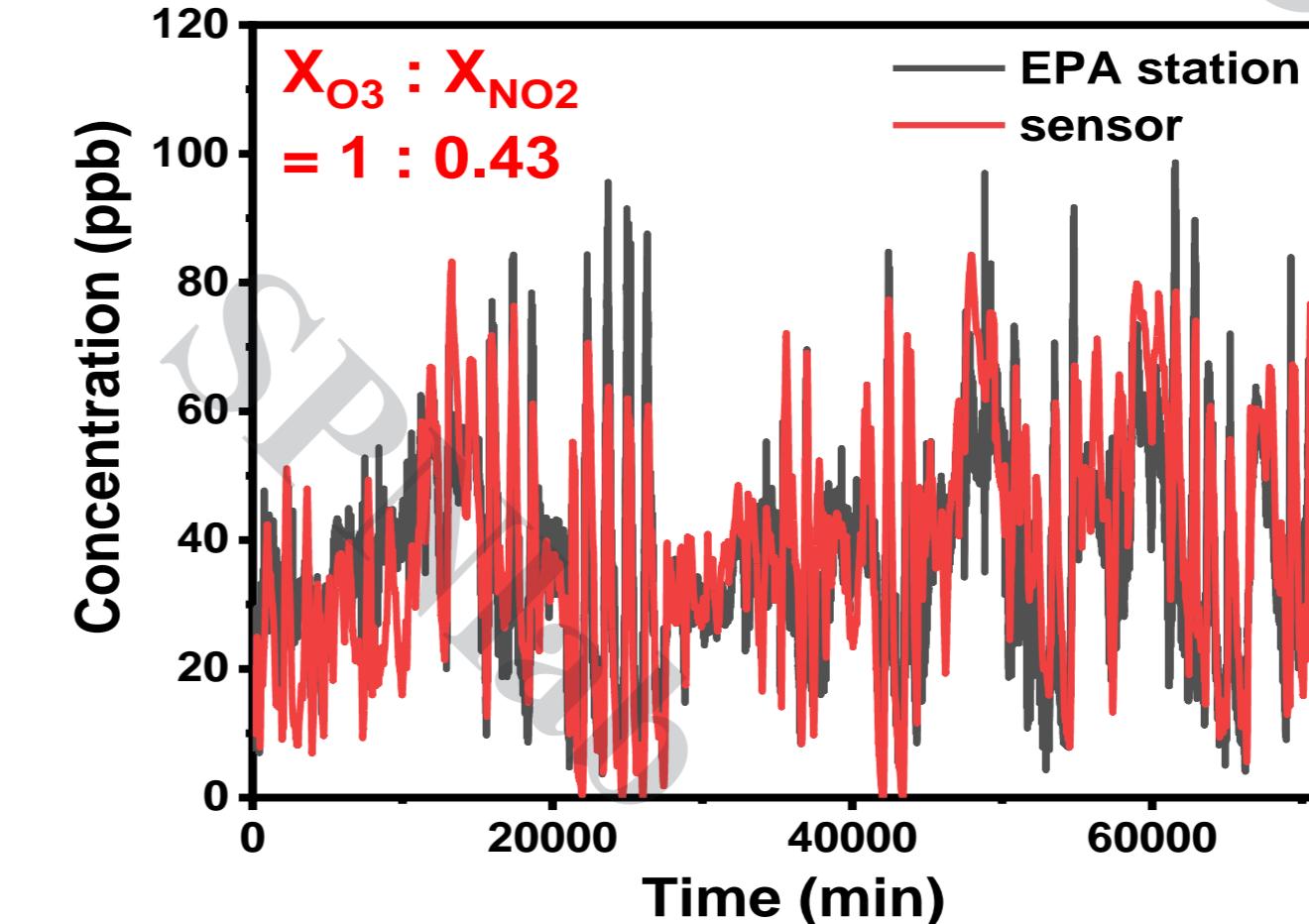


Portable Sensor and Field Test



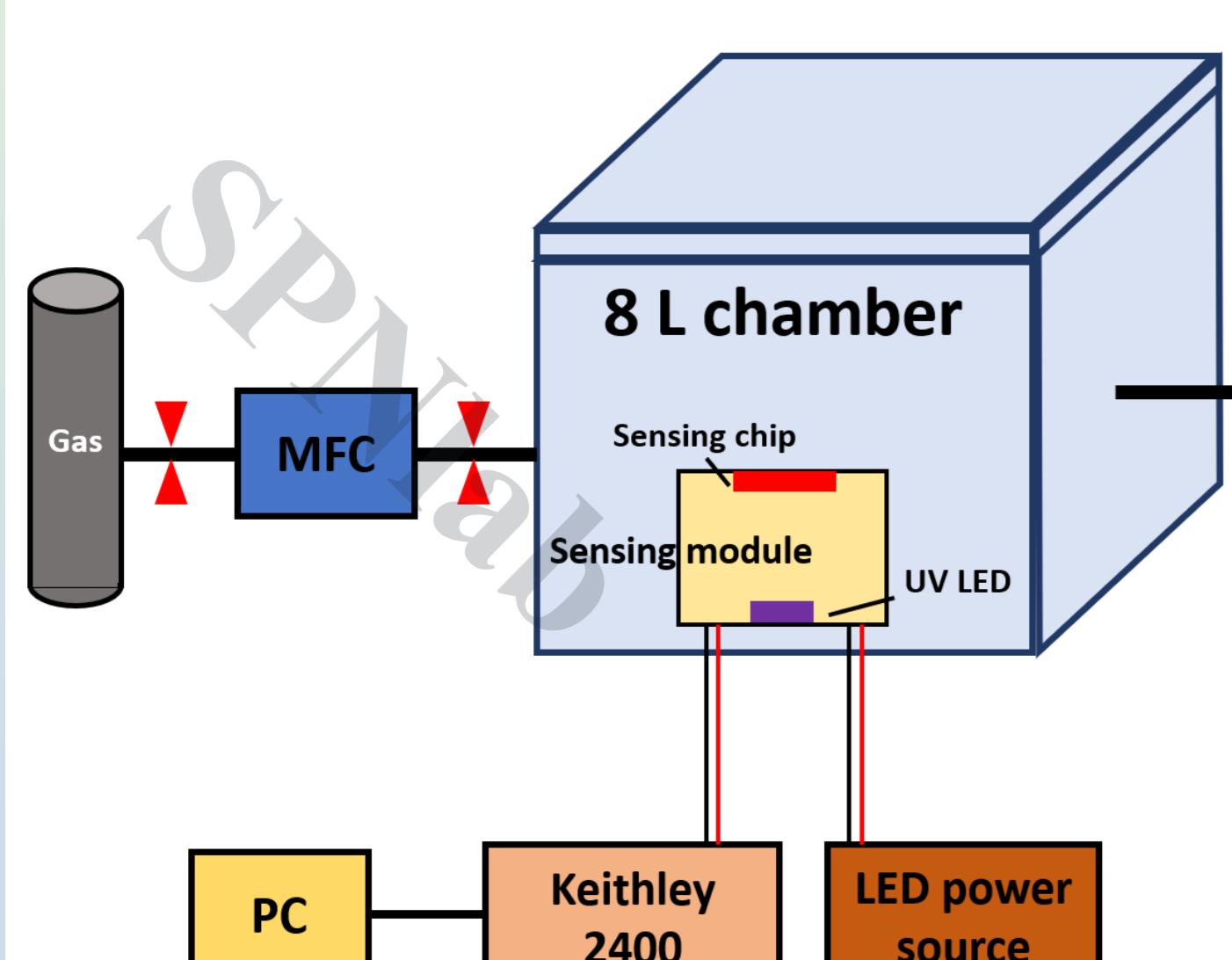
Architecture of ANN:

- The diagram illustrates the architecture of an Artificial Neural Network (ANN) for predicting gas concentration. It consists of three layers: an input layer with four nodes labeled T_t , RH_t , R_t , and R_{t-1} ; a hidden layer with three nodes; and an output layer with one node labeled "Conc.". Every node in the input layer is fully connected to every node in the hidden layer, which in turn is fully connected to the single output node. The connections are represented by green lines.

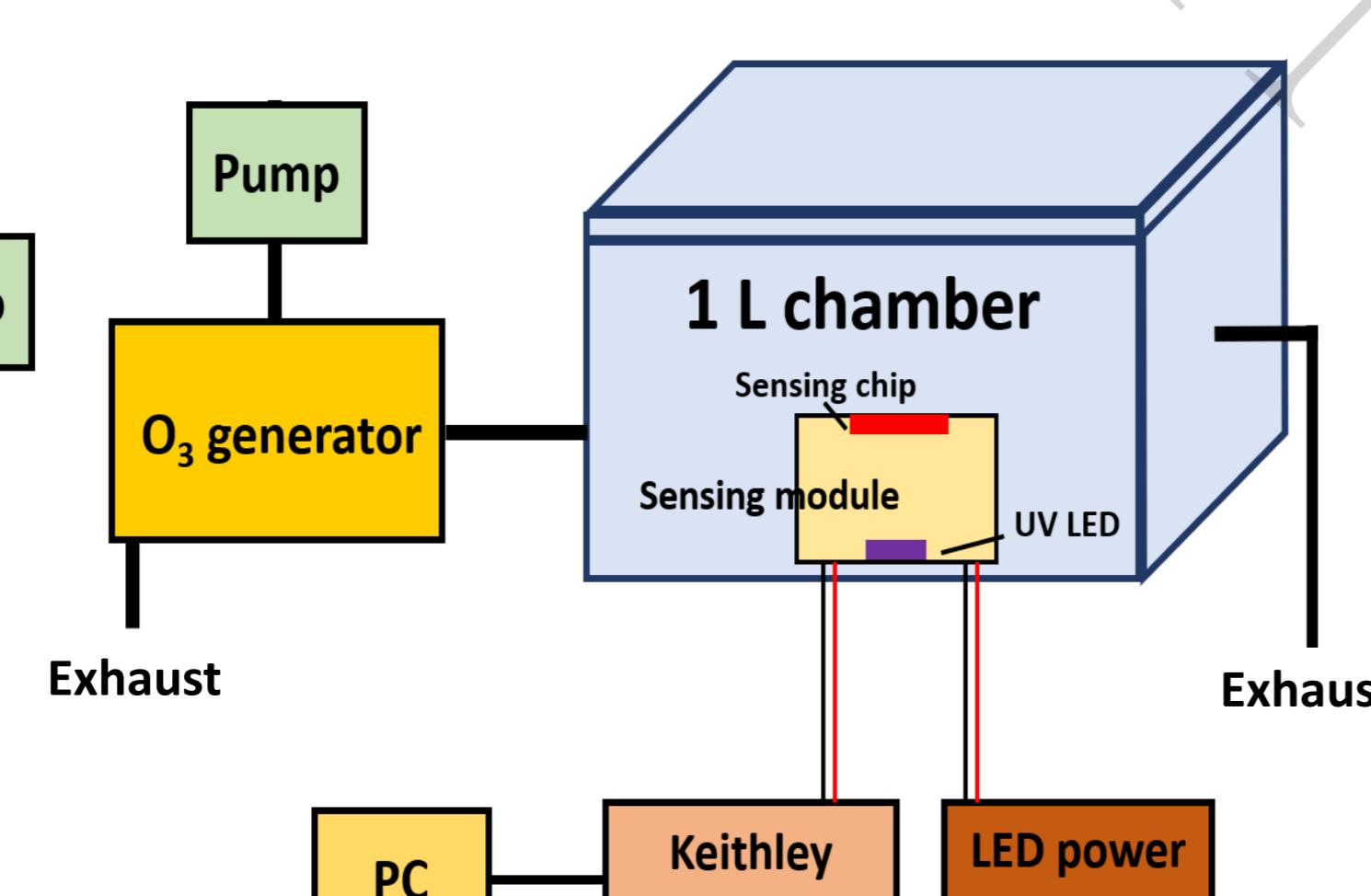


Sensing Systems

Closed system



Flow system



Cu₂O/Au/ZnO

