

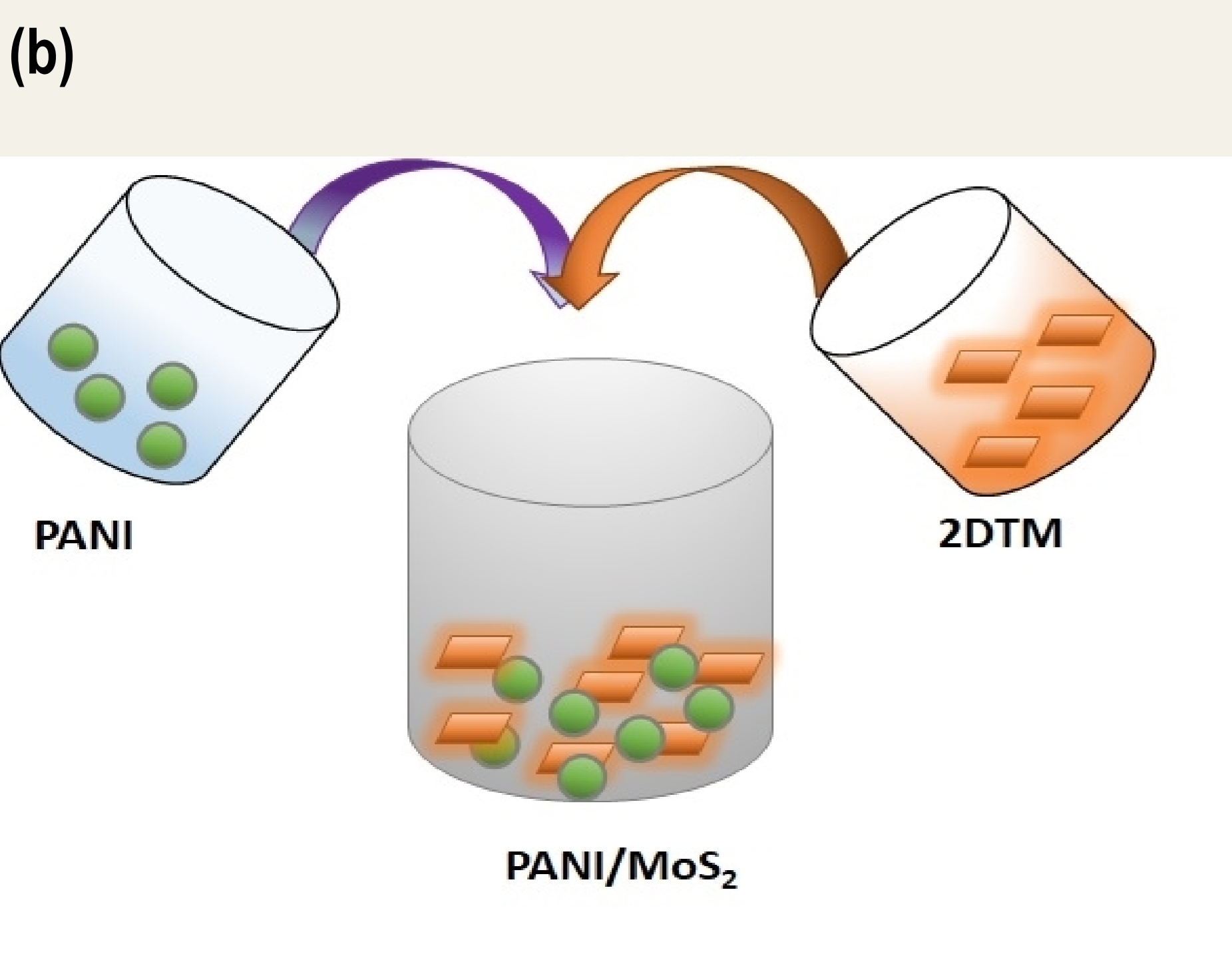
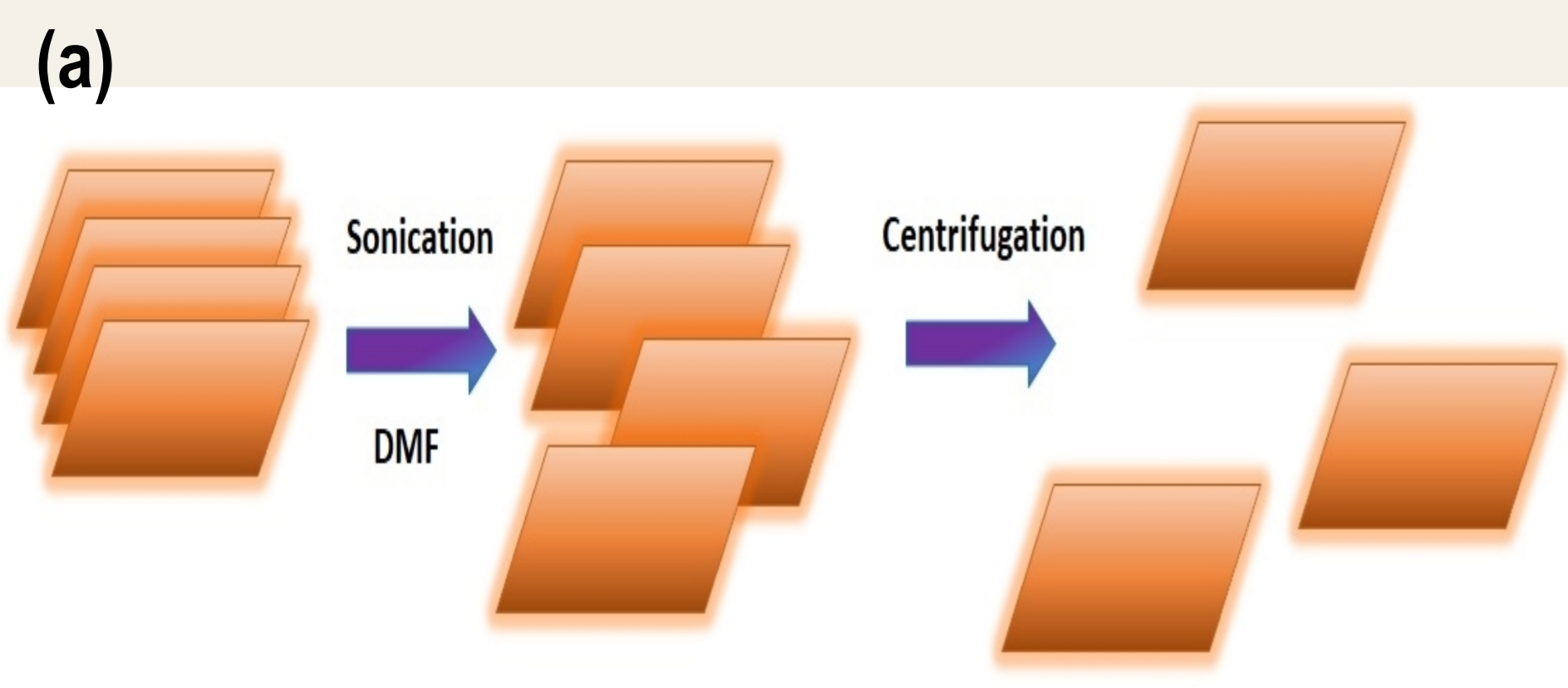
## Introduction

• Carbon dioxide (CO<sub>2</sub>) is one of the main greenhouse gases, resulting in harmful impacts on environments such as global warming and climate change. Consequently, CO<sub>2</sub> gas must be detected and monitored to ensure a stable climate.

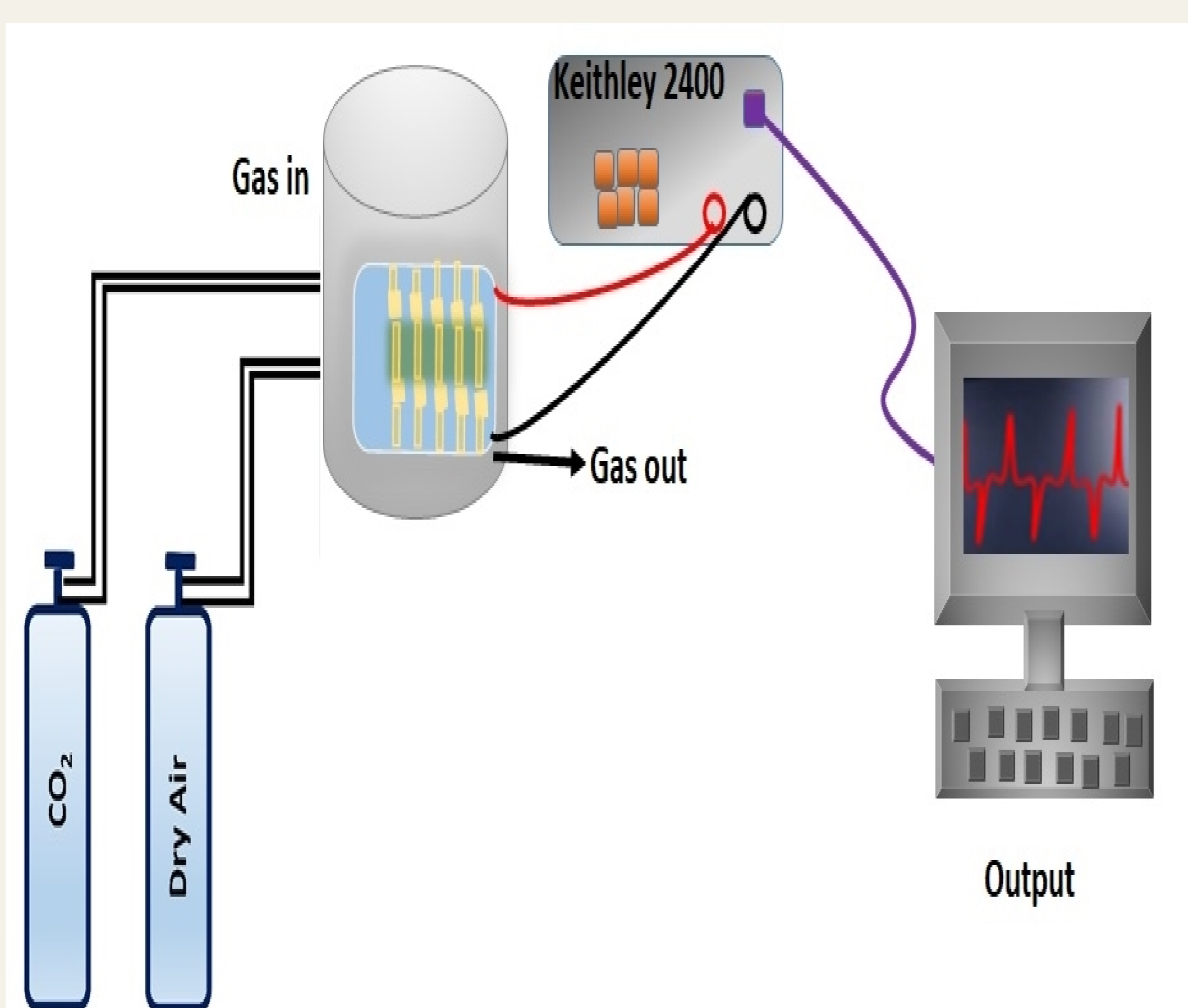
• The CO<sub>2</sub> sensor is commonly used in many applications, including monitoring of air quality, food packaging, monitoring of greenhouse gases, medical diagnosis, fire detection and consumer electronics.

• In this research, we prepared MoS<sub>2</sub> sheets synthesized using liquid exfoliation techniques and successfully prepared PANI/MoS<sub>2</sub> composites by in-situ polymerization process.

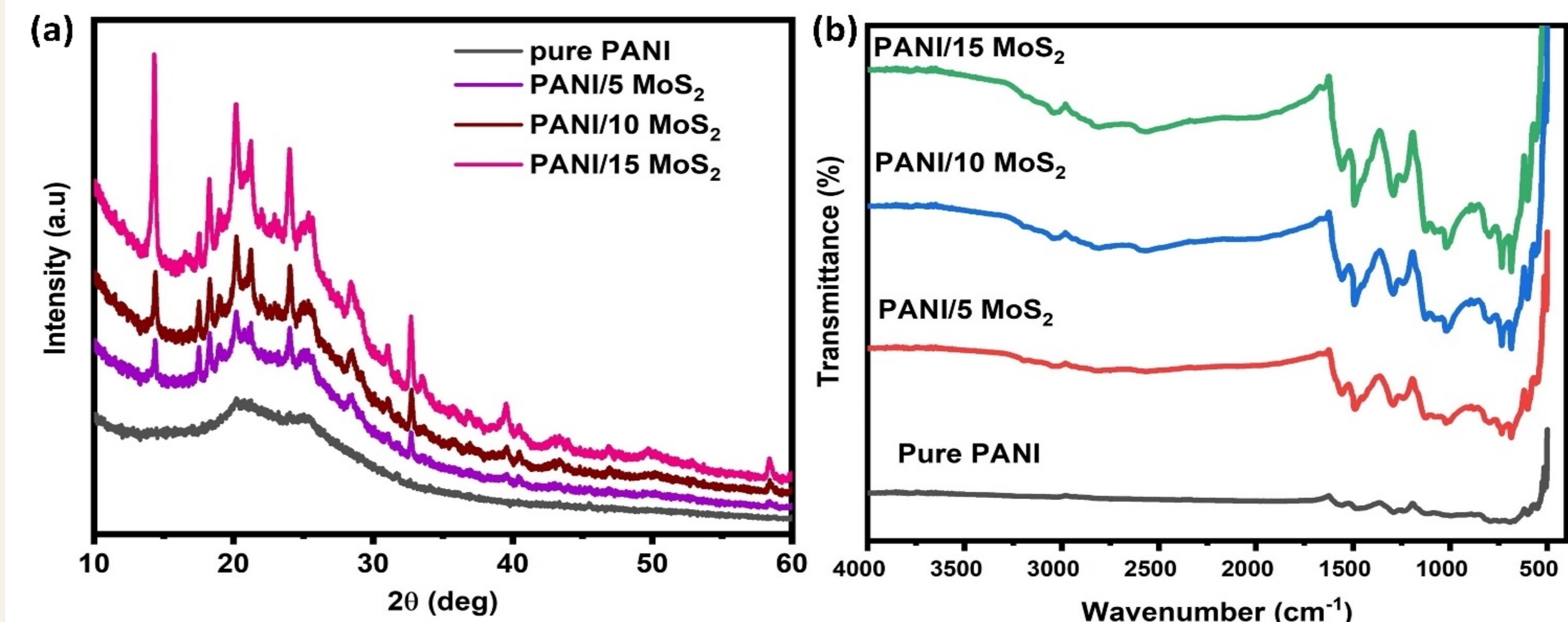
## Experimental technique



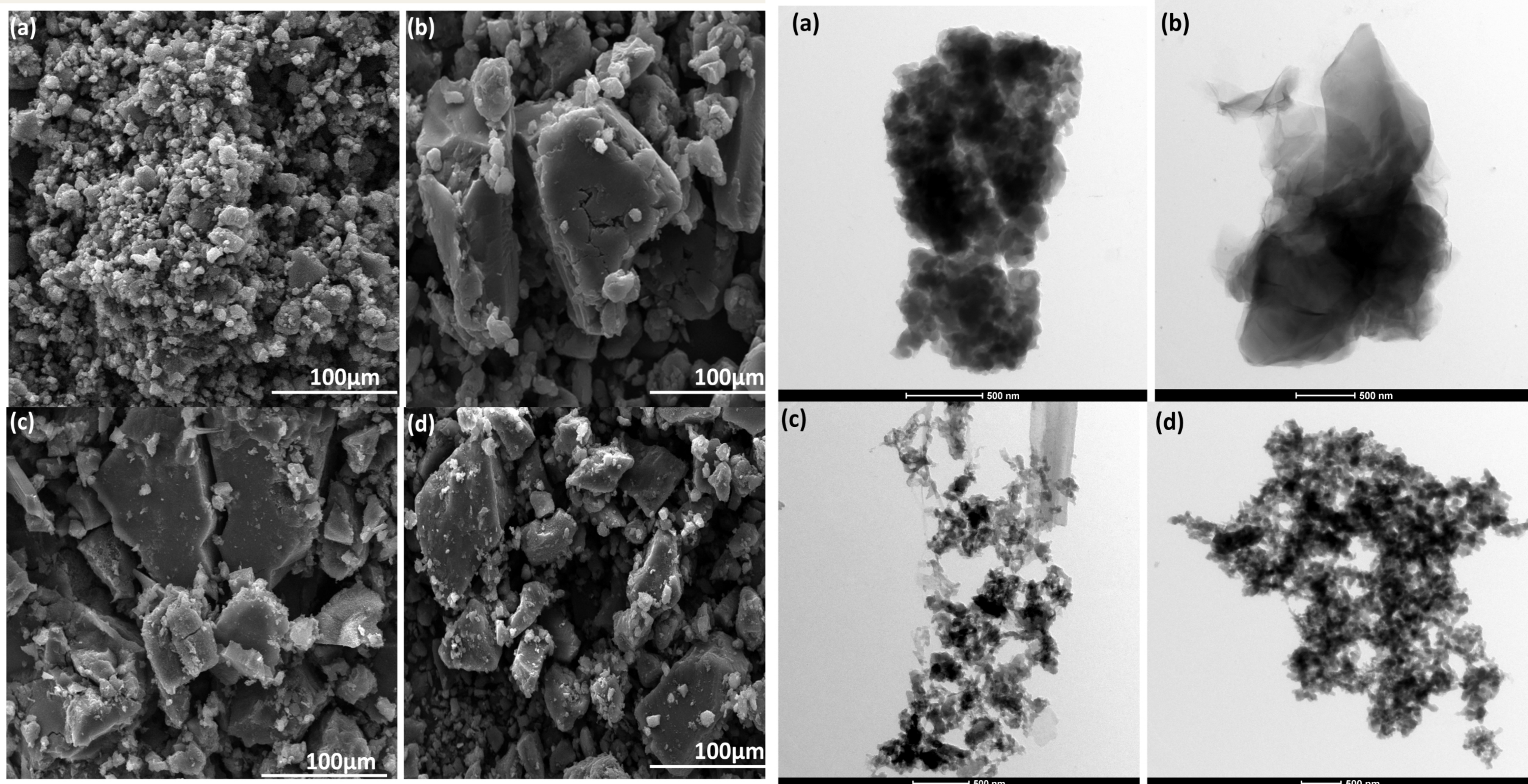
## Gas sensor setup



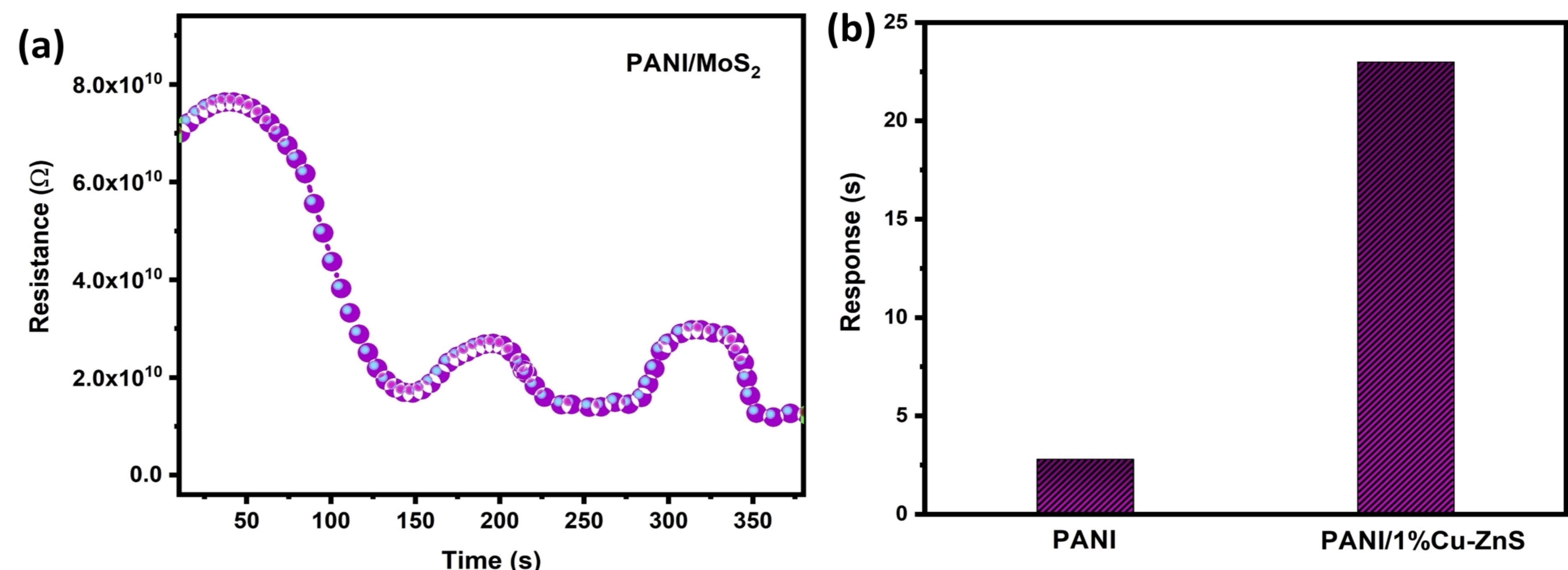
## Structural properties



## Surface morphology of the nanocomposites



## Gas sensing properties



## Conclusion

- PANI/MoS<sub>2</sub> nanocomposite with unique surface morphology were synthesized.
- The composite shows quick response and recovery behavior and good reproducibility towards CO<sub>2</sub> sensing.

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