

Brief proposal

❑ **Title:** GMR based sensing technology

❑ **Responsibility:**

- **TSRI:** GMR sensing structure fabrication (direct formation or mold fabrication) and sensing materials preparation
- **NECTEC:** GMR design and simulation, VOC detection, data analysis

❑ **Outcome for co-sharing:**

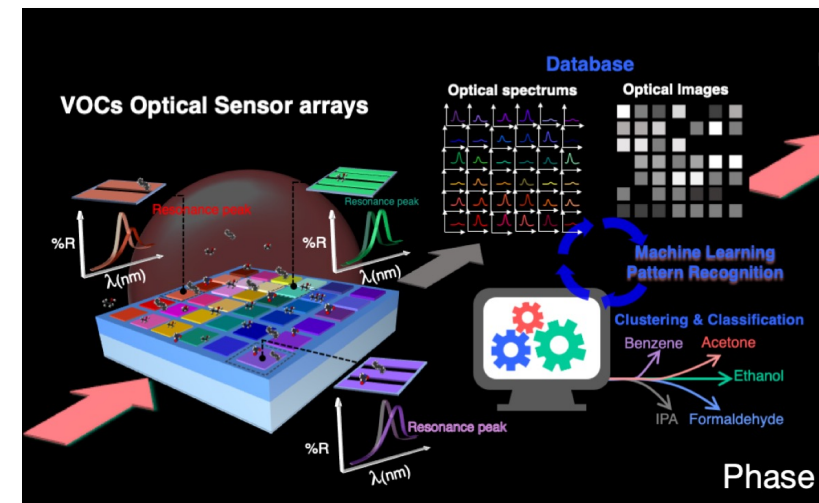
- **TSRI:** GMR pattern platform establishment + optical materials processing capability
- **NECTEC:** GMR sensor array design, data process methodology

❑ **Partners:**

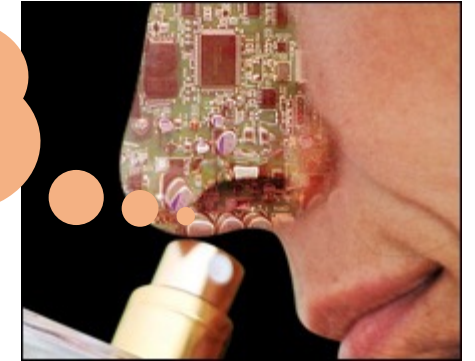
- **TSRI:** [Dr. Jong Chao An](#)
- **NECTEC:** [Dr. Sakoolkan Boonruang](#)

❑ **Timeline:**

- **1st year:**
 - a. GMR sensor design and fabrication evaluation (pitch<400nm) ;
 - b. Different GMR materials selection
 - c. Validation of GMR sensor structure with single sensing materials for different VOC selective detection
- **2nd year:**
 - a. Fabrication of GMR sensor array device with multiple sensing materials for different VOC selective detection;
 - b. Validation of GMR sensor array for enhanced sensitivity and VOC selection.
 - c. Portable reader development



There is gas leaking!
Evacuate!



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台灣半導體研究中心
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