



DOST-PCIEERD R&D Technologies/Initiatives on Air Quality

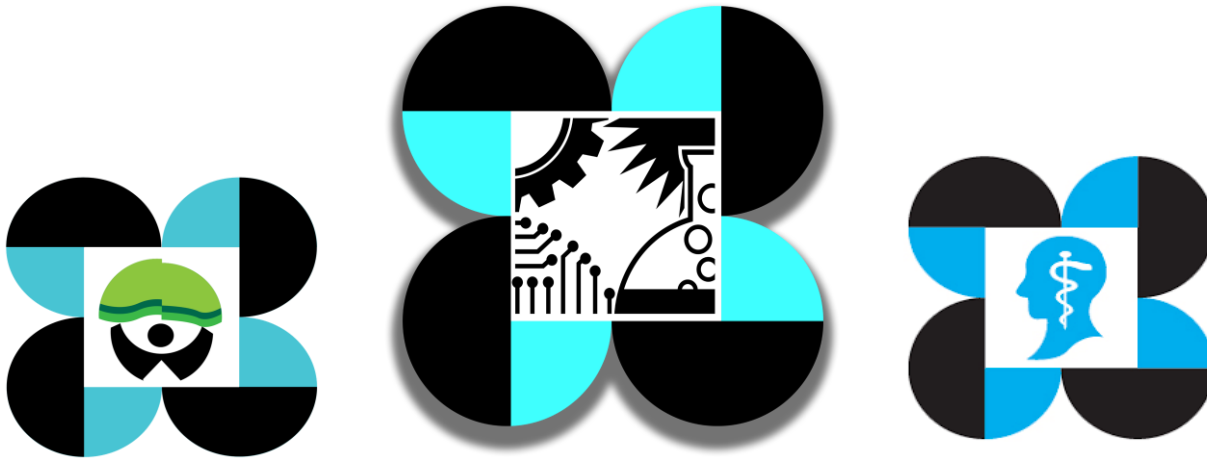
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**Department of Science and Technology
PHILIPPINE COUNCIL FOR INDUSTRY, ENERGY AND
EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT**

Who is DOST-PCIEERD?

The **Philippine Council for Industry, Energy, and Emerging Technology Research and Development** (PCIEERD) is one of the three sectoral planning councils of the Department of Science and Technology (DOST).



Our Mandate



Support for Research and Development



Human Resource and Institution Development



S&T Information Dissemination and Promotion



Support for Technology Transfer and Commercialization



Policy Development and Advocacy

Our Sectoral Coverage

INDUSTRY



Electronic & Semiconductor Industries



Mining & Minerals



Metals & Engineering



Food Processing



Process

ENERGY



Energy efficiency



Transportation

EMERGING TECHNOLOGY



Materials Science/
Nanotechnology



Genomics/
Biotechnology



Information & Communications
Technology



Space
Technology
Applications



Photonics



Artificial
Intelligence



Data
Science



Creative
Industries

SPECIAL CONCERNS



Climate
Change
Adaptation



Disaster Risk
Reduction &
Management



Environment



Human
Security



AIR QUALITY SENSOR

Robust Optical Air Monitor (ROAM)

- Optical aerosol monitor that has a smaller footprint, lower power requirement and more environmentally rugged construction
- 3 units-collocated with reference units
- Pilot tested in Tagaytay City and Cauayan City
- On-going optimization and improvement in the enclosure, sensor, Unit User Interface and Web & Mobile Application
- On-going business development (test marketing, product certification & trademark & copyright Application)



AIR QUALITY SENSOR

eBC and VOC Sensors

- On-going research on the locally developed air pollution sensors specifically for Black Carbon and VOC that are cheaper than commercial sensors available in the market



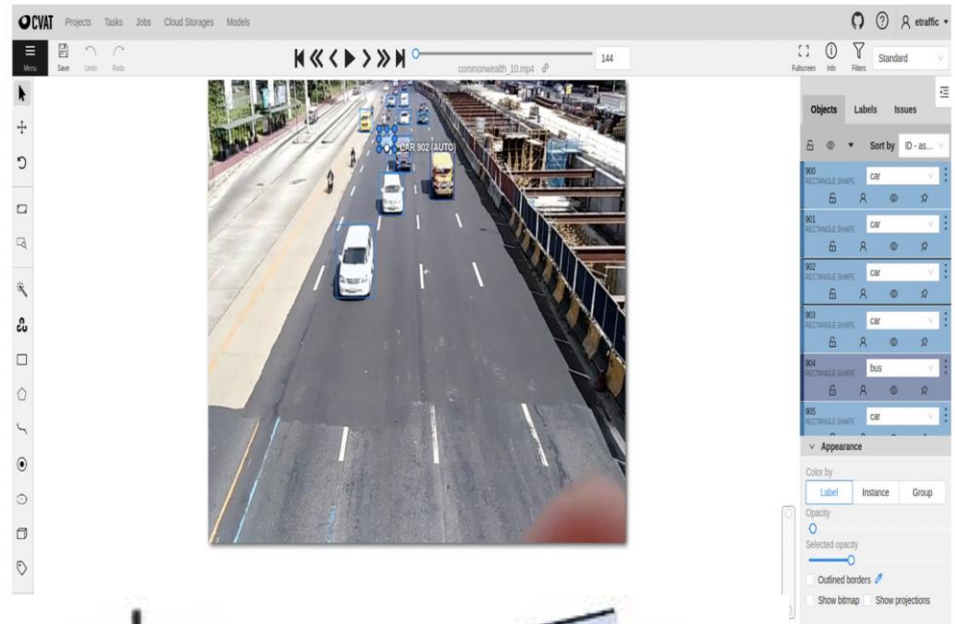
Reference: [Global Black Carbon Sensor Devices for Air/Gas Monitoring \(openpr.com\)](http://openpr.com)



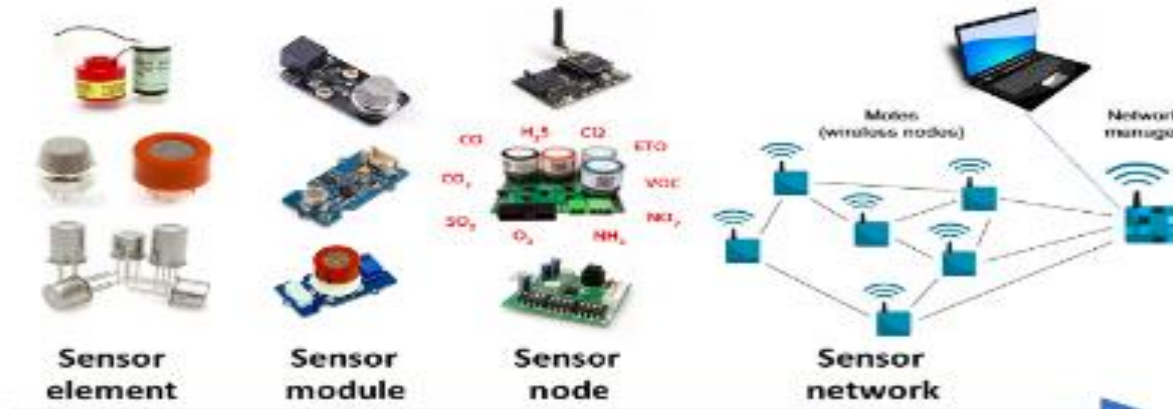
Reference: [VOC - ScienceScope](http://ScienceScope)

Systems for Indoor and Outdoor Air Quality Monitoring

- ✓ On-going research to develop an integrated IoT platform/ system for air quality monitoring and network protocol for both outdoor and indoor air quality



DESIGN OVERVIEW



AIR FILTERS

ZEOSKIN: A Green Indoor Air Filter

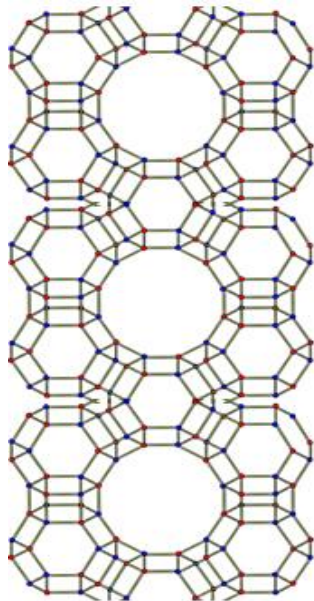
- A wall plaster that has adsorptive capacity for reducing pollution in indoor air
- Produced two (2) variants
- Projected saturation life is 8 years with assumed 75% efficiency



AIR FILTERS

Aluminosilicate Technology for Compact Air Purification

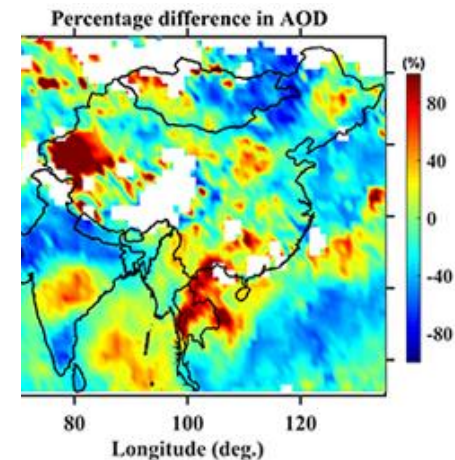
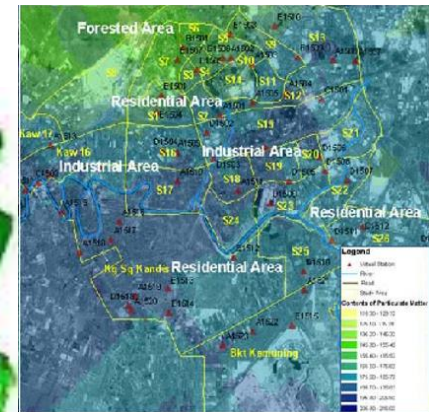
A portable air purifier for automotive air filtration systems which works as a particulate filter, harmful gas remover, and anti-microbial filter



AIR QUALITY MAPPING & MODELLING

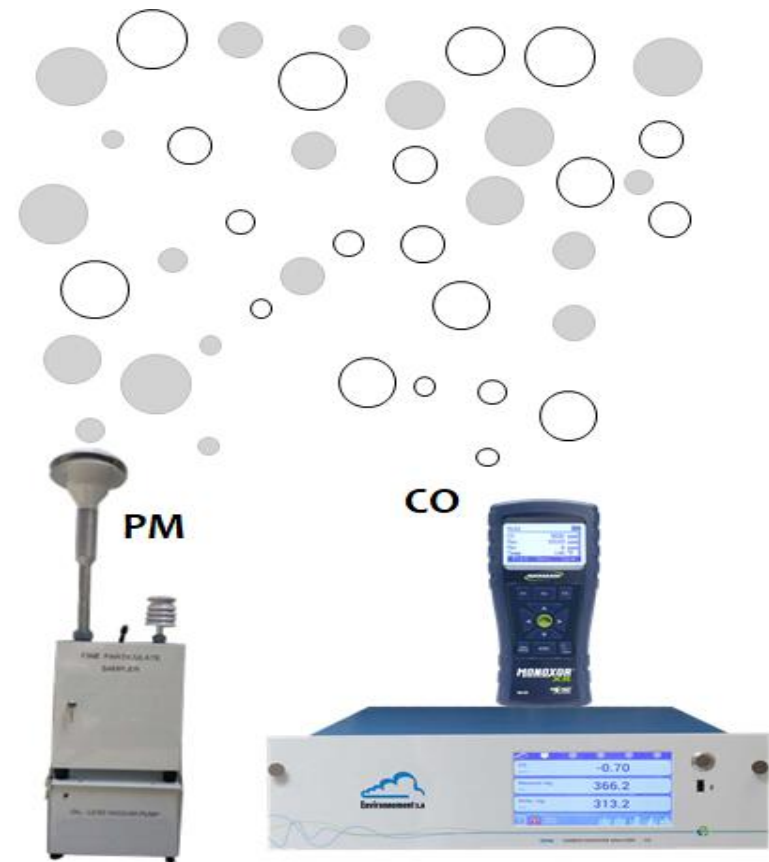
Ambient Air Remote Sensing, Modeling & Visualization Environment (AirMOVE)

- A technique to identify attainment and non-attainment areas in Metro Manila, Philippines for air quality monitoring using combinations of Remote Sensing (RS), Geographic Information Systems (GIS) and numerical modeling techniques

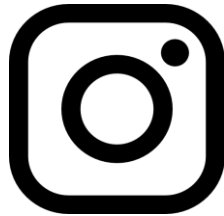


Air Quality Validating Facility

- National validating entity/facility for the PM and CO Measuring Devices/sensors developed locally and imported
- Partnership of the Department of Science and Technology (DOST) and Department of Environment and Natural Resources (DENR) through a Joint Administrative Order for the validation of air quality sensors



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