

# Supporting Conversion from Fuel to Gas, UGM Develops Cartridge Gas Tube with Low Pressure

Friday, 05 September 2014 WIB, By: Marwati



YOGYAKARTA - A lecturer in Chemical Engineering of UGM, Ir. Imam Prasetyo, M.Eng., Ph.D., has developed a technology in storing gas using cartridge, done by gas adsorption through porous carbon. This is expected to solve the problem of energy conversion from fuel to gas. There are concerns among people in using gas due to possibilities of gas explosion and the expensive cost of gas compression.

In Indonesia, conventional gas tubes have pressure up to 200 bar, which is very risky. The lecturer has made an innovation in using porous carbon in gas tube. It is cheaper and safer while the material used is smaller and thinner.

“The tank can be made from stainless steel, hence the pressure is lower, the material is thinner and cheaper, also safer, while the gas compression also costs lower,” said the man born 42 years ago in Temanggung.

## Reducing Gas Pressure

The Adsorbed Natural Gas (ANG) technology developed by Imam can decrease the gas pressure down to hundreds of bar. The gas is adsorbed to the porous carbon located at the bottom of the tube. The material of the carbon is polymer that undergoes pyrolysis that is nanometer in size, thus it can adsorb and accumulate the gas molecules.



Although this has not been tested for collision or ignition, Imam believes that the ANG product is safe as the pressure in the gas tube is only as low as 30-40 bar as opposed to the pressure in regular tubes which reaches up to 200-250 bar. Currently, a company, PT. Barata Indonesia, is conducting a test to place this research finding on vehicles.

### **Cartridge system**

The gas tube uses cartridge system that is replaceable. Hence, people will not have to queue at the gas stations.

Reportedly, State Owned Enterprises Minister Dahlan Iskan appreciated the research finding. He said the finding can replace fuel for vehicles and state owned electricity company.

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