Waste Cooking Oil Turned into Biogasoline

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Three UGM students have developed biogasoline from waste cooking oil. They are Abdul Afif Almuflih anf Khoir Eko Pamudi (Chemical Engineering) and Endri Geovani (Socio-Economics Agriculture). Their research on the oil waste named as JECO-Gasoline has won four international awards.

These are gold medal from *World Invention Intellectual Property Association* (WIIPA), gold medal from *Indonesian Invention and Innovation Promotion Association* (INNOPA), bronze medal from *Malaysian Technology Expo* (MTE) 2016, and special award from *Toronto International Society of Innovation & Advanced Skillis* (TISIAS) Canada. They also won awards in competitions nationally.

Abdul Afif said they made use of cooking oil as this has not been much used by people while it is widely available.
"Waste cooking oil can harm human health if used repetitiously," he said on Thursday (24/3) in Heat and Mass Laboratory of PAU UGM.

They sought a method to process the waste oil into biodiesel, making use of hydrocracking to convert oil into biogasoline.
"We use clay, namely bentonit terpilar alumina (AI) which is easy to get. The clay is activated with cadmium (Cd) as catalyst," he said.

Biogasoline production starts with catalyst making as media to convert oil. Then, production process is done through hydrocracking. The oil is heated in electric kiln then it will form evaporise, passing

through the catalyst. The result will drip into a mixture of biogasoline and biodiesel that is later separated using distillation.

“The result is around 42 percent of biogasoline and 29 percent biodiesel. Hence, 1 litre of oil can produce 420 ml, consisting of 240 ml biogasoline and 180 biodiesel,” he said.

“The making is simple with faster production process as it is only through catalyst making and hydrocracking,” Endri Geovani said. He hoped the research can be followed up.

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