# Rice Husk: Vehicle CO2 Reducer

Mohd Zaidi, Muhammad Hazim
Azmi, Ariff

Vehicle releases high amount of carbon dioxide into the atmosphere. This carbon dioxide released is the biggest factor that leads to global warming. An idea has occur on using rice husk as activated carbon for the adsorption of CO2 gas released by vehicles. First, rice husk are blended to the size of smaller than 1mm. The blended rice husks are put in six separate 250 ml beakers. Each beaker were then filled with 50 ml of 1M, 2M and 3M of KOH and 1M, 2M, and 3M of ZnCl2. Samples were stirred continuously for one hour at speed 700 rpm. Next, the samples are dried in the oven at 100oC overnight. The dried samples are calcined in CVD machine, at 500oC for two hours. Results were obtained using TGA, FTIR, CHN and SEM machine. From TGA result, activation using KOH shows better result than ZnCl2. Activation using 1M KOH and 1M ZnCl2 results in 78.03% and 27.92% of CO2 adsorption. The pore size is the biggest factor for carbon dioxide adsorption. SEM result shows that activation using 1M KOH produces the most suitable pore size for carbon dioxide adsorption. FTIR machine shows the presence of silica in samples. High amount of silica leads to low adsorption. CHN shows that untreated rice husk has a high carbon amount, that is 63.11%. After chemical treatment, the carbon amount in each sample is still high, ranging from 40%-60%, proving that rice husks is a suitable substance to make activated carbon. Based on the compiled results, 1M KOH activation is the best method of chemical activation with 78% of CO2 adsorption and can be developed for various usage.

**Awards Won:**