To Investigate the Fire-Resistant Property of Rice Husk

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This project is about an investigation to find out whether rice husk could be used for producing wood that can be substituted as a fire-resistant wood in general. Experiment with coconut husk was conducted for comparison which is used to manufacture palm wood that is quite expensive and rarely available. But in contrast the alternate rice husk is easily available and economical. The research was organized in three stages. First test was done directly on raw rice husk and coconut husk to compare their flammable properties, second was the preparation of fire repellent spray and testing it on pieces of wood which proved the anti-fire properties of the extract, the last step included the testing on prototype which proved itself fire proof due to the presence of silica as an anti-oxidizing agent. The second stage of experimental analysis includes burning of plain wood samples. Types of Wood / Time Taken for Catching Flames Plain Wood (with Kerosene Oil) - 30 sec Soaked in Water (with Kerosene Oil) - 36 sec Soaked in Rice Husk Extract (with Kerosene Oil) – 1 min 3 sec Plain Wood (without Kerosene Oil) - 1 min 2 sec Soaked in Water (without Kerosene Oil) - 1 min 20 sec Soaked in Rice Husk Extract (without Kerosene Oil) - 1 min 46 sec In the third stage, self-expanding polyurethane foam glued with layers of rice husk prototype was made and tested for its fire resistant property .The experiments concluded that rice husk can be used for the manufacturing of fire resistant wood and fire-resistant spray on industrial basis. In future rice husk can be used as a source for the manufacturing of fire resistant furniture and other home appliances Due to the high rate of silica it would naturally resist fire and would not be consumed by termites as they can not digest silica.