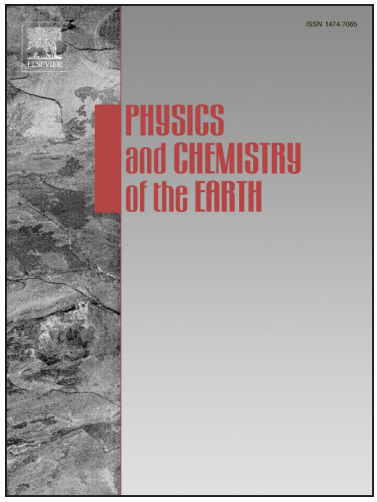

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APPLICATION OF RICE HULL ASH FOR TURBIDITY REMOVAL FROM WATER

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Abstract

Rice hull ash containing amorphous silica was produced from locally available rice hulls (unparboiled and parboiled), using a muffle furnace at 800 ^{o}C. The ashes obtained from the two rice hulls samples were washed with distilled water and characterized using scanning electron microscope with electron dispersive spectroscopy (SEM/EDS) and BET analysis. The laboratory filtration experiments were carried out in order to study the performance of the rice hull ash in removing turbidity from water. This was done using water with an initial turbidity, pH and total dissolved solids (TDS) of 88 NTU, 6.63 and 127 ppm respectively. The parboiled rice hull ash (PRHA) sample showed higher surface area, but lower pore volume and pore sizes compared to the unparboiled rice hull ash (URHA) sample. Also, PRHA contained higher silica content and sum of the other elemental compositions than the URHA sample. All the ashes used showed controlled pH to the acceptable level (7.00-8.50). A good percentage of turbidity removal up to 96% with increasing TDS (816 ppm) was reached.