# Production of silica nanospheres via low cast rice husk and their optical properties

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This paper presents the production and characterization of silica nanospheres using low cast rice husk. In this regard, initially the low cast rice husk was cultivated from local rice field and washed well with high purity distilled water and were treated with acid leaching process (1:10 HCl and $H_2O$) to remove the atmospheric dirt and impurity. The acid treated rice husk was again washed with distilled water and dried in an oven at 60°C. The dried rice husk was further annealed at different temperatures (620 and 900°C) for the formation of silica nanospheres. The confirmation of silica was observed by the X-ray diffraction pattern and FTIR spectroscopy. The morphology of obtained nanostructures were analyzed via FE-SEM and Transmission electron microscopy (TEM) and it reveals that the size of each nanosphares is about 50-60 nm. The optical property of synthesized material was analyzed via room temperature photoluminescence (PL) spectroscopy.