



**3<sup>rd</sup>**  
INTERNATIONAL WORKSHOP  
ADVANCES IN CLEANER PRODUCTION

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“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

## **Characterization of Waterworks Sludge and Coal Ashes Aiming its Use in Manufacture of Brick**

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### **Abstract**

Sludge from treatment water Brazilian plant station are, frequently, disposed and launched directly in the water bodies, causing a negative impact in the environment. Also, fly ash is produced by burning of coal in coal-fired power stations and is the industrial solid waste most generated in southern Brazil: approximately 4 million tons/y. Efficient disposal of coal fly ash is an issue due to its massive volume and harmful risks to the environment.

The present work is being developed with the objective of evaluating the viability of the use of the sludge of the treatment water plant stations along with the coal ashes to manufacture bricks. Samples of fly ashes from a cyclone filter from a coal-fired power plant located at Figueira County in Paraná State, Brazil and waterworks sludge of Terra Preta County in São Paulo State, Brazil, were used in the study. The materials were characterized by chemical analysis, X-ray diffraction, thermal analysis, morphological analysis and granulometric analysis. Fly ash-sludge and fly ash-sludge-soil-cement bricks were molded and tested, according to the Brazilians Standards. None of the bricks produced in the studied conditions has attended the requirements of the Brazilian norms of quality of compressive strength.

**Keywords:** *Coal Ashes, Waterworks Sludge, Brick*

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São Paulo – Brazil – May 18<sup>th</sup>-20<sup>th</sup> - 2011