**Sustainable Power Generation Through CoCombustion of Agricultural Residues with Coal in Existing Coal Power Plant**

**Authors**: Wan Azlina Wan Ab Karim Ghani, Azil Bahari Alias

**Topic**: Co-combustion of agricultural residues with coal in power plants.

**Methodology**: Fluidized bed combustion, testing biomass-coal blends under varied conditions.  
**Dataset**: Properties of coal, rice husk, and palm kernel shell.

**Models/Algorithm**: Carbon combustion efficiency based on emissions; influence of fluidization velocity and air supply.

**Results**: Increased efficiency with coal addition, optimized at specific velocities and ratios. Biomass showed high reactivity, with temperature profiles and CO emissions varying by feedstock and conditions.

**Effective utilization of waste ash from MSW and coal co-combustion power plant—Zeolite synthesis**

**Authors**: Yun Fan, Fu-Shen Zhang, Jianxin Zhu, Zhengang Liu

**Topic**: Utilizing waste ash from MSW and coal co-combustion power plants to synthesize zeolite for wastewater treatment.

**Methodology**: Fusion-hydrothermal synthesis; varied NaOH ratios, temperatures, and reaction times to optimize zeolite properties.

**Dataset**: MSW-coal ash characterization, chemical compositions, and adsorption experiments for Zn²⁺.

**Models/Algorithm**: Langmuir and Freundlich isotherm models for adsorption.

**Results**: Optimized conditions yielded zeolite X with high cation exchange capacity (250 cmol/kg) and superior adsorption capacity compared to coal fly ash zeolite, demonstrating suitability for heavy metal removal.