Turbulent Combustion Modeling of Coal: Biomass Blends in a Swirl Burner I – Preliminary Results

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A combustion model using three mixture fractions has been developed for accurate simulation of coal: manure combustion. This model treats coal and manure off gases separately. This model has been incorporated into the PCGC-2 (Pulverized Coal Gasification and Combustion – 2 Dimensional, from Brigham Young University) code. Numerical results of this simulation are presented. The results are compared with those from the two mixture fraction model of the original code. While the overall simulation results from both models appear similar, there are significant differences in local temperature predictions in the near burner region.

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