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## SDI FINAL EVALUATION FORM 1.1

**.PART 1:**

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| Journal Name: | Journal of Energy Research and Reviews |
| Manuscript Number: | **Ms_JENRR_48508** |
| Title of the Manuscript: | **Effects of High Temperature in the Combustion Chamber of a Drop Tube Furnace (DTF) for Different Thermochemical Processes** |
| Type of Article: | **Original Research Paper** |

**PART 2:**

| **FINAL EVALUATOR'S comments on revised paper (if any)** | **Authors' response to final evaluator's comments** |
|---|---|
| **Kindly empower the abstract so it could stand for what it is meant for. The following key parameters should be well accommodated in the abstract:**<br>**Introduction**<br>**Research problem**<br>**Methods**<br>**Results**<br>**Conclusion** | **Introduction:** Thermochemical and biochemical processes are used to convert biomass into useful and sustainable energy. Thermoconversion processes comprises the biomasses burning in an oxygen-rich environment or in the absence of this, where types and fuel properties, process conditions, particles size, air flow rate and fuel moisture affect directly the combustion characteristics, altering the generation and heat transfer and the reaction rates. The combustion chamber temperature is an important factor for the biomasses combustion or other material, because this exerts large influence in the thermal processes efficiency, products yield and composition of the generated products.<br>**Research problem:**<br>For this reason, this paper aims to investigate the high temperature behavior in the combustion chamber of a Drop Tube Furnace (DTF)<br>**Methods:**<br>Different thermochemical processes (conventional combustion, pyrolysis and two typical oxy-fuel combustion atmospheres) and five Brazilian biomasses (pine sawdust, sugarcane bagasse, coffee and rice husks, and tucumã seed) are employed. Such monitoring in situ was performed using two thermocouples located inside the furnace: one in the upper and other in bottom part.<br>**Results:**<br>For the different biomasses and thermal processes (atmospheres), a trend in the high temperature variations of the combustion chamber and residence times were observed, which can be related to the biomasses feeding system, moisture of samples and specific furnace operation conditions.<br>**Conclusion:**<br>This study can support in new projects elaboration of thermochemical conversion systems in lab-scale or industrial for the burning of several biomasses or other materials with purpose bioenergy generation. |