

2nd International Congress and Expo on**Biofuels & Bioenergy****August 29-31, 2016 Sao Paulo, Brazil****Evaluation of two drop-in jet fuels tested in a micro scale turbo-jet engine****Caio Ferreira Alvares, Henrique Takeuchi Carmona and Thais Maia Araujo**
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The history of aviation success is based on facing many challenges such as development of new technologies, saving fuel and increasing the efficiency of the airplanes. Currently, the concern with emissions by combustion process of aviation fuel has been added as challenge as well. Gases released from the process are composed, mainly, by GHG (green house gases), i.e. CO₂, CO, NO_x, and to lower them will lead to a fuel development. Inserting the use of bio-fuels in aviation world has been considered as a way to moderate pollutant gases released in the atmosphere. Suitable for this purpose is the use of drop-in fuels, defined as those renewable fuels, which can be blended with petroleum products, such as aviation fuel, and utilized in the current infrastructure of pumps, pipelines and other existing equipment. The purpose of this study was to evaluate the consumption and the efficiency, during a combustion process of a turbojet running with drop-in fuels. The tests were carried out in a test-bench turbojet engine where aviation kerosene, sugarcane ethanol and olive oil were mixed in different quantities. Firstly a pattern database was established running the turbojet only with kerosene. Then the two drop-in fuels were tested and the mass blends percentages were determined by monitoring their consumption and efficiency. The results were a maximum of 25% ethanol blended with kerosene; started with a 5% and went up to 25%. Olive oil went to a 5% maximum blend with kerosene.

Biography

Henrique Takeuchi Carmona has completed his first academic degree in Science and Technology from Universidade Federal do ABC. At the moment, he is studying Aerospace Engineering in the same university, and intends to focus on combustion engine field. He has been an intern at TAM Linha's Aéreas S.A. since September 2015, one of the most important airline companies in Brazil.

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