

**ATE  
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Heat Transfer Fluid Mechanics  
and Thermodynamics  
Applied Thermal Engineering  
**VIRTUAL CONFERENCE**  
26-28 July 2021

# CERTIFICATE

OF

## ORAL PRESENTATION

AWARDED TO

**Jose Vargas**

FOR PRESENTING

EXERGOECONOMIC ANALYSIS OF AN AUTOMOTIVE ENGINES PRODUCTION  
LINE

Adalberto Gonçalves, Jose Vargas (Universidade Federal do Parana, Brazil) and Wellington Balmant

AT

THE 15<sup>th</sup> INTERNATIONAL CONFERENCE ON HEAT TRANSFER, FLUID  
MECHANICS AND THERMODYNAMICS (HEFAT) AND EDITORIAL  
BOARD OF APPLIED THERMAL ENGINEERING (ATE)

Prof. J.P. Meyer  
ATE-HEFAT 2021 | Conference Chair  
Head of Mechanical and Aeronautical Engineering,  
Faculty of Engineering, Built Environment & IT  
University of Pretoria

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**Jose Vargas**

**FOR PRESENTING**

**MODELING AND SIMULATION OF MICROALGAE HYDROGEN PRODUCTION IN  
LARGE PHOTOBIOREACTORS**

Fernando Dias, Jose Vargas (Universidade Federal do Parana, Brazil), Vanessa Kava, Wellington Balmant,  
Andre Mariano, Jose Parise and Lauber Martins

AT

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