

**ATE  
HEFAT  
2021**



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

# CERTIFICATE OF ORAL PRESENTATION

AWARDED TO

**César Rueda Durán**

**FOR PRESENTING**

**ANALYSIS OF THE INFLUENCE OF DIAPHRAGM AND PROGRESSIVE CAVITY  
PUMPS FOR FEEDING CATALYSTS IN SLURRY AT INDUSTRIAL POLYPROPYLENE  
PRODUCTION**

César Augusto Rueda Durán and Carlos Ariel Cardona Alzate (Universidad Nacional de Colombia Sede  
Manizales, Colombia)

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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## ORAL PRESENTATION

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**César Rueda Durán**

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**TECHNO-ECONOMIC ANALYSIS OF REFRIGERATION SYSTEM BASED ON THE  
STORAGE CAPACITY. THE PROPYLENE CASE AT INDUSTRIAL LEVEL.**

César Augusto Rueda Durán and Carlos Ariel Cardona Alzate (Universidad Nacional de Colombia Sede  
Manizales, Colombia)

AT

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

A handwritten signature in black ink, appearing to be "J.P. Meyer", written in a cursive style.

Prof. J.P. Meyer  
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