

Università degli Studi di
Napoli Federico II

Scuola Politecnica e
delle Scienze di Base



Corso di Studi in
Ingegneria Meccanica

CORSO DI LAUREA MAGISTRALE IN
INGEGNERIA MECCANICA PER L'ENERGIA E L'AMBIENTE
(Classe delle Lauree Magistrali in Ingegneria Meccanica – LM33)

Elaborato di Laurea

**THEORETICAL STUDY AND PRELIMINARY DESIGN OF A SLUG CALORIMETER FOR
ATMOSPHERIC REENTRY CONDITIONS**

Relatore:

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Candidato:

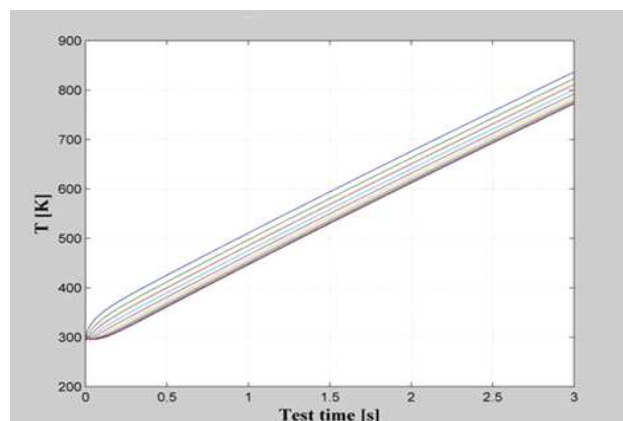
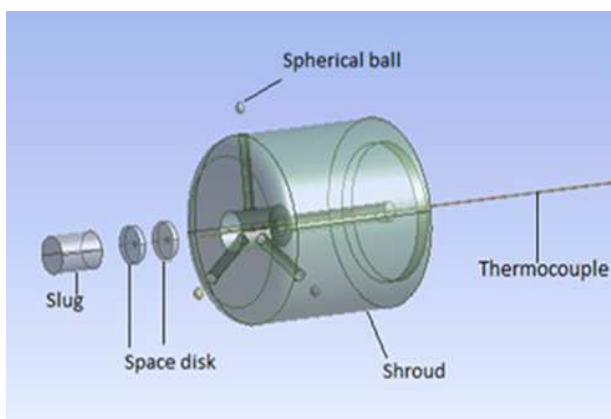
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SOMMARIO

This work, developed at Aerodynamics Research Center (ARC) of University of Texas at Arlington – UTA (USA), is focused on the analysis and understanding of slug calorimeters which are probes used to characterize the heat flux levels for atmospheric reentry conditions. In particular, the effort has spanned from the development of a 1-D model to the 3-D Finite Elements Analysis of the complex transient thermal response under constant and variable convective heat-fluxes. Particular attention has been devoted to the error analysis of measured heat fluxes under variable loads which is a very important subject for the correct application of these instruments in arc-jet flows.



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