MaSS
DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL & STATISTICAL SCIENCES

CoE-MaSS weekly seminar series

THE DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL AND STATISTICAL SCIENCES (CoE-MaSS) WOULD LIKE TO PRESENT A SEMINAR BY

Prof Mohammad Mehdi Rashidi

(School of Mechanical Engineering, Tongji University)

"Analytical Modeling of Entropy Generation for Casson Nano-Fluid"

Friday, 19 February 2016
10h30-11h30

Broadcast live from:
Videoconferencing Facility, 1st Floor
Mathematical Sciences Building, Wits West Campus

How to connect to this seminar remotely:
You can connect remotely via Vidyo to this research seminar by clicking on this link:
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You must please join in the virtual venue (called *"CoE Seminar Room (Wits)"* on Vidyo) strictly between **10h00-10h15**. No latecomers will be added.

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Once the seminar commences, please mute your own microphone so that there is no feedback from your side into the virtual room. During the Q&A slot you can then unmute your microphone if you have a question to ask the speaker.

Title:
Analytical Modeling of Entropy Generation for Casson Nano-Fluid

Presenter:
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Abstract:
The nano-fluids in view of the fabulous thermal conductivity enhancement have been recognized useful in several industrial and engineering applications. Present article provides an analytical investigation of the fluid flow, heat and mass transfer and entropy generation for the steady laminar non-Newtonian nano-fluid flow over a stretching sheet in the presence of the velocity slip and convective surface boundary conditions using Optimal Homotopy Analysis Method (OHAM). The current OHAM solution demonstrates very good correlation with those of the previously published studies in the especial cases. The influences of different flow physical parameters on fluid velocity component, temperature distribution and concentration profile as well as the entropy generation number are discussed in details. This study specifies that nanoparticles in the base fluid offer a potential in increasing the convective heat transfer performance of various liquids.

Keyword: Entropy analysis; Casson fluid; Nano-fluid; Stretching surface; Velocity slip; Convective boundary condition; Optimal HAM.