

## PUBLIC LECTURE ANNOUNCEMENT

MINERALS, METALS AND MATERIALS TECHNOLOGY CENTRE (M3TC)  
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We are organising a series of public lectures that will highlight some of the research activities by M3TC

<b>TOPIC</b>	<b>Mathematical Modeling of Selected Metal Processing Operations</b>
<b>SPEAKER</b>	<b>Dr Wu Zhonghua Minerals, Metals and Materials Technology Centre (M3TC), NUS</b>
<b>CHAIRER BY</b>	<b>Prof Arun Sadashiv Mujumdar (Centre Director, M3TC)</b>
<b>DATE</b>	<b>2<sup>nd</sup> November 2009, Monday</b>
<b>TIME</b>	<b>11am to 12.00pm</b>
<b>VENUE</b>	<b>EA-02-FY-FOYER OUTSIDE EA LEVEL 2 , Faculty of Engineering, National University of Singapore <u><a href="#">NUS Campus Map</a></u> &amp; <u><a href="#">NUS: Faculty of Engineering</a></u></b>

Please register via email: [m3tc@nus.edu.sg](mailto:m3tc@nus.edu.sg)

### SYNOPSIS

With the re-structuring and consolidation of the steel manufacturers, issues such as efficiency and energy-saving have become more important and urgent. Numerical simulation is seen as a cost-effective way of developing improved metal processing technology. In this seminar, we will focus on steelmaking and related processes, especially in the conceptual phase. Considering the complex phenomena occurring during steelmaking in different stages such as in tundishes, casting molds, furnaces, and so on, our CFD models considered post combustion in the electrical arc furnace (EAF) to save energy, optimization of flow field in tundishes, the effect of magnetohydrodynamics (MHD) on the steel casting process, etc. Selected CFD results and some novel designs for steelmaking processes will be presented and discussed. CFD modeling can improve the understanding and reduce empiricism in the design of such processes. Simple modifications of equipment can improve performance greatly, leading to innovation.

Keywords: CFD, Continuous casting, Electrical arc furnace, Post combustion, Steelmaking, Tundish

### BIOGRAPHY

Dr. Wu Zhonghua is a Research Fellow in the Minerals, Metals and Materials Technology Centre (M3TC), NUS since Oct, 2007. He obtained his master's degree from China Agricultural University in 2003 and PhD degree from NUS in 2007. His current research interests are in computational fluid dynamics, heat and mass transfer, modeling in metal and minerals processing etc. He has published 10 journal papers, 2 book chapters and over 15 conference papers.

## All Are Welcome. Admission is Free

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