

# Multi-scale Modelling Symposium

7-8 December 2009

Ian Wark Lecture Theatre, CSIRO Molecular & Health Technologies, Clayton,  
Bayview Avenue, Clayton VIC 3168



## PROGRAM

Day 1 - Monday, 7 December 2009		
8.30	<b>REGISTRATION</b>	Foyer, Ian Wark Theatre Reception
<b>PLENARY SESSION (Chair: Dr Phil Schwarz)</b>		Ian Wark Lecture Theatre
9.00	Opening Address	Dr Jim Peacock, Enterprise Services General Manager ST, Executive and Comms and Science Strategy
9.20	<b>Keynote Lecture</b> <b>Prof Jinghai Li</b> (Chinese Academy of Science)	MULTI-SCALE PARADIGM OF PARALLEL COMPUTATIONAL RETROSPECTS, PROGRESSES AND PERSPECTIVES
10.10	<b>MORNING TEA</b>	Foyer, Ian Wark Theatre Reception
10.40	<b>Keynote Lecture</b> Yonduck Sung, Maulik Metha, Venkat Raman and <b>Prof Rodney Fox</b> (Iowa State Univ)	MULTISCALE MODELS FOR NANOPARTICLE SYNTHESIS IN TURBULENT FLAMES
11.30	<b>Keynote Lecture</b> <b>Prof Aibing Yu</b> (Univ of NSW)	PARTICLE SCALE MODELLING AND ANALYSIS OF PARTICLE FLUID FLOW
12.30	<b>LUNCH</b>	Foyer, Ian Wark Theatre Reception

<b>(Chair: Dr John Taylor)</b>		Ian Wark Lecture Theatre			
1.30	<b>Keynote Lecture Dr Phil Schwarz (CSIRO)</b>	A MULTI-SCALE MODELLING METHODOLOGY FOR MULTI-PHASE PROCESSING APPLICATIONS			
2.20	Workshop	Trends in Multi-scale Modelling ( <b>Facilitator: Markus Fietz, CSIRO</b> )			
3.00	<b>AFTERNOON TEA</b>	Foyer, Ian Wark Theatre / Reception			
		<b>SESSION 1 – Ian Wark Lecture Theatre</b>		<b>SESSION 2 - Spurling/Hewertson Rooms</b>	
		<b>(Chair: Prof Rodney Fox)</b>		<b>(Chair: Prof Aibing Yu)</b>	
3.30	<b>Jack Katzfey,</b> John McGregor and Marcus Thatcher (CSIRO)	FINE RESOLUTION SIMULATION OF WEATHER AND CLIMATE USING A VARIABLE-RESOLUTION GLOBAL MODEL	<b>Charles Radeke,</b> Stefan Radl and Johannes Khinast (Research Centre Pharmaceutical Engineering GmbH)	GRANULAR FLOWS - SHOWING SIZE EFFECTS BY USING HIGH PERFORMANCE SIMULATION ON GPUS	
3.50	<b>Michael Borgas</b> (CSIRO)	MULTI FRACTAL CODING FOR TURBULENT MIXING OF PLUMES	<b>Christoph Kloss,</b> Georg Aichinger and Stefan Pirker (Johannes Kepler University)	MULTI-SCALE MODELLING OF PARTICLE MOTION BY MEANS OF DEM AND DPM	
4.10	<b>Anjani Didwania,</b> Prabhanjan K Didwania and Sushil K Mahata (Univ of California)	A THEORETICAL FRAMEWORK FOR MULTI-SCALE SIMULATION OF CATECHOLAMINE PRODUCTION BY NICOTINIC STIMULATION	<b>Ming Xu,</b> Wei Ge, Feiguo Chen and Jinghai Li (Chinese Academy of Science)	SIMULATION OF THE HETEROGENEOUS STRUCTURE IN PARTICLE-FLUID SYSTEM WITH DPM BY MULTI-LEVEL PARALLEL COMPUTATION	
4.30			Wai Sam Wong, Stephen Cole, Richard D. LaRoche and <b>John Favier,</b> (DEM Solutions Ltd)	MODELLING PARTICLE-FLUID SYSTEMS WITH NON-SPHERICAL PARTICLES	
5.00	<b>Tour of the CSIRO experimental fluids engineering facility</b>				
6.30 7:00	Pre-Dinner drinks Dinner	Monash University, Banquet Room, Campus Centre, Building 10 (refer map at the end)			

<b>Day 2 - Tuesday, 8 December 2009</b>				
8.30	<b>REGISTRATION</b>	Foyer, Ian Wark Theatre / Reception		
<b>(Chair: Dr Murray Rudman)</b>		Ian Wark Lecture Theatre		
9.00	<b>Keynote Lecture Dr Madhava Syamlal</b> (DOE, NETL)	MULTI-SCALE MODELING FOR ACCELERATING THE DEVELOPMENT OF ADVANCED ENERGY SYSTEMS WITH CARBON MANAGEMENT		
10.00	<b>Keynote Lecture Prof Jos Derksen</b> (Univ of Alberta)	MESO-SCALE SIMULATIONS OF SOLID-LIQUID FLOW & AVENUES TO THE MACRO-SCALE		
11.00	Morning Tea	Foyer, Ian Wark Theatre Reception		
		<b>SESSION 1 – Ian Wark Lecture Theatre</b>		<b>SESSION 2 - Spurling/Hewertson Rooms</b>
		<b>(Chair: Prof Jos Derksen)</b>		<b>(Chair: Dr Madhava Syamlal)</b>
11.30	<b>Andrey Bekker,</b> I. Livk (CSIRO)	AGGLOMERATION AND TURBULENCE INTERFERENCE IN THE PSEUDO-PLASTIC MULTIPHASE FLOW	G Tomar, D Fuster, <b>S Zaleski</b> and S Popinet (UPMC University Paris)	MULTISCALE SIMULATIONS OF PRIMARY ATOMIZATION
11.50	<b>Dana Grecov,</b> (Univ of British Columbia)	MULTISCALE THEORY AND SIMULATION FOR THERMOTROPIC LIQUID CRYSTALLINE MATERIALS	<b>Stefan Radl,</b> Radompon Sungkorn, Daniele Suzzi, Jos Derksen, Johannes G Khinast (Graz University of Technology)	HIGH PERFORMANCE SIMULATION OF BUBBLY FLOWS PUSHING THE LIMIT BY USING CONVENTIONAL CFD AND LBGK

12.10	<b>Dmitry Eskin</b> , John Ratulowski, Kamran Akbarzadeh, Shu Pan and Thomas Lindvig (Schlumberger DBR Technology Center)	AN APPROACH TO MODELING ASPHALTENE DEPOSITION IN A TURBULENT PIPE FLOW ON THE BASIS OF COUETTE DEVICE EXPERIMENTAL DATA	<b>James Hilton</b> and Paul Cleary (CSIRO)	A MULTISCALE METHOD FOR EXTREME GEOPHYSICAL FLOW EVENTS
12.30	<b>LUNCH</b>	Foyer, Ian Wark Theatre / Reception		
<b>(Chair: Dr Matt Sinnott)</b>		Ian Wark Lecture Theatre		
1.30	<b>Keynote Lecture</b> <b>Prof Anne Robertson</b> (Univ of Pittsburgh)	CONSTITUTIVE MODELLING OF DAMAGE TO THE ARTERIAL WALL- A PROBLEM OF MULTIPLE SCALES IN SPACE AND TIME		
2.20	Workshop	The Future <b>(Facilitator: Markus Fietz, CSIRO)</b>		
3.00	<b>AFTERNOON TEA</b>	Foyer, Ian Wark Theatre Reception		
<b>(Chair: Dr Phil Schwarz)</b>		Ian Wark Lecture Theatre		
3.30	<b>Keynote Lecture</b> <b>Dr Paul Cleary</b> (CSIRO)	MULTISCALE METHODS FOR PARTICLES AND FLUIDS IN INDUSTRIAL AND GEOPHYSICAL SYSTEMS		
4.20	Close			
4:25 – 5:00	Informal meetings			

# Map of CSIRO and Monash Clayton Campus

