Ninth International Conference on Computational Fluid Dynamics in the Minerals and Process Industries

10-12 December 2012
Melbourne Conference and Exhibition Centre, Victoria, Australia

OFFICIAL PROGRAM

Day 1 - Monday,10 December				
8.30	**REGISTRATION**	Conference Foyer, MCEC, Melbourne		
PLENARY SESSION *(Chairman Peter Witt)*		Conference Room 105 & 106		
9.00	Welcome from CSIRO	Peter Witt, CSIRO		
	Opening	Dr Phil Schwarz, CSIRO		
9.20	**Keynote Lecture** **Mark Davis** and Dry, R.J. (HIsmelt Corporation)	*CFD MODELLING IN THE DEVELOPMENT AND SCALE-UP OF THE HISMELT PROCESS*		
	SESSION 1 (Conference Room 105 & 106)	**SESSION 2 (Conference Room 104)**	**SESSION 3 (Conference Room 103)**	**SESSION 4 (Conference Room 101 & 102)**
	Pyrometallurgy *(Chairman)*	**Population Balance** *(Chairman)*	**Particle Collisions** *(Chairman)*	**Subsea** *(Chairman)*
10.20	**Goniva, C.G**., Wierink, H.W., Heiskanen, K.H., Kloss, C.K. and Pirker, S.P. (JKU, Linz, AUSTRIA) MODELLING THREE-PHASE FLOW IN METALLURGICAL PROCESSES	**Krepper, E.** and Lucas, D. (Helmholtz-Zentrum Dresden-Rossendorf) POPULATION BALANCE MODEL FOR THE CFD SIMULATION OF ADIABATIC AND DIABATIC TWO PHASE GAS LIQUID FLOWS	**Pawar, S.K.,** Padding, J.T., Deen, N.G., Kuipers, J.A.M., Jongsma, A. and Innings, F. (Eindhoven University of Technology, The Netherlands) EULERIAN-LAGRANGIAN MODELLING WITH STOCHASTIC APPROACH FOR DROPLET-DROPLET COLLISIONS	**Leahy, M.J.,** Jagannatha, D., Chauvet, C. and Holbeach, J. (MSi Kenny) CFD MODELLING OF A SUBSEA COOLER FOR CALCULATION OF EXTERNAL HEAT TRANSFER COEFFICIENT
10.40	Majeski, A.J., **Runstedtler, A.,** D'Alessio, J., MacFadyen, N. and Ferron, K. (Natural Resources Canada) THE EFFECTS OF LANCE POSITIONING AND DESIGN ON THE CO-INJECTION OF PULVERIZED COAL AND NATURAL GAS INTO BLAST FURNACES	**Li, Z.,** Kessel, J., Gruenewald, G. and Kind, M. (Karlsruhe Institute of Technology) COUPLED CFD-PBE SIMULATION FOR NUCLEATION AND PARTICLE GROWTH IN FLUIDIZED BED SPRAY GRANULATION	**Cummins, S.J.,** Thornton, C. and Cleary, P.W. (CSIRO CMIS) CONTACT FORCE MODELS IN INELASTIC COLLISIONS	**Mokaramian, A.,** Rasouli, V. and Cavanough, G. (Curtin University) CFD SIMULATIONS OF TURBODRILL PERFORMANCE WITH ASYMMETRIC STATOR AND ROTOR BLADES CONFIGURATION
11.00	**MORNING TEA**	Conference Foyer, MCEC, Melbourne		

	SESSION 1 (Conference Room 105 & 106)	SESSION 2 (Conference Room 104)	SESSION 3 (Conference Room 103)	SESSION 4 (Conference Room 101 & 102)
	Pyrometallurgy *(Chairman)*	**Population Balance** *(Chairman)*	**Drop Breakup/Coalesence** *(Chairman)*	**Subsea** *(Chairman)*
11.30	Darmana, D., **Olsen, J.E.,** Tang, K. and Ringdalen, E. (SINTEF) MODELLING CONCEPT FOR SUBMERGED ARC FURNACES	**Schellander, D.,** Schneiderbauer, S. and Pirker, S. (CD-Laboratory on Particulate Flow Modelling) NUMERICAL STUDY OF AGGLOMERATION MODELING IN POLYDISPERSED GAS-SOLID FLOWS WITH RESPECT TO PARTICLE SEPARATION	Buffo, A., **Marchisio, D.L.,** Vanni, M. and Renze, P. (Politecnico di Torino, ITALY) SIMULATION OF COALESCENCE, BREAK UP AND MASS TRANSFER IN GAS-LIQUID SYSTEMS BY USING MONTE CARLO AND QUADRATURE-BASED MOMENT METHODS	**Kubicki, D.** and Lo, S. (CD-adapco) SLURRY TRANSPORT IN A PIPELINE - COMPARISON OF CFD AND DEM MODELS
11.50	**Gartner, L.E.,** Grabner, M. and Meyer, B. (Freiberg Uni., GERMANY) INFLUENCE OF COAL BLEND COMPONENT KINETICS ON ENTRAINED FLOW GASIFICATION PERFORMANCE	**Icardi, M.,** Marchisio, D.L. and Labois, M. (Politecnico di Torino) EFFICIENT SIMULATION OF A TWO-PHASE VERTICAL PIPE FLOW WITH POPULATION BALANCE METHOD	**Mason, L.R.,** Stevens, G.W. and Harvie, D.J.E. (The University of Melbourne) MULTI-SCALE VOLUME OF FLUID MODELLING OF DROPLET COALESCENCE	**Irikura, M.,** Maekawa, M., Hosokawa, S. and Tomiyama, A. (Graduate School of Engineering, Kobe University) ONSET OF SLUGGING OF STAGNANT LIQUID AT A V-SHAPED ELBOW IN A PIPE-LINE: EXPERIMENT AND NUMERICAL SIMULATION
12.10	**Kloss, C.,** Seil, P., Hauzenberger, F., Amberger, S., Feilmayr, C., Pirker, S. and Goniva, C. (JKU Linz, Austria) SIMULATION OF PARTICLE SEGREGATION IN METALLURGICAL FURNACES FOR IRON PRODUCTION	**Amokrane, A.A.,** Charton, S., Lamadie, F.H., Becker, J., Klien, J.P. and Puel, F. (French Nuclear Energy Commission) STUDY OF THE DISPERSED PHASE BEHAVIOR IN A PULSED COLUMN FOR OXALATE PRECIPITATION IN AN EMULSION	**Gumulya, M.,** Utikar, R.P., Pareek, V.K., Tade, M.O. and Evans, G.M. (Curtin University) NUMERICAL SIMULATION OF THE COLLISION OF A DROPLET WITH A HEATED SOLID SURFACE	**Mo, S.,** Ashrafian, A., Barbier, J-C and Johansen, S.T. (SINTEF Materials and Chemistry) QUASI-3D MODELLING OF TWO-PHASE SLUG FLOW IN PIPES
12.30	**LUNCH** Conference Foyer, MCEC, Melbourne			

PLENARY SESSION *(Chairman)*		Conference Room 105 & 106
1.30	**Keynote Lecture** **Djamel Lakehal** (ASCOMP GmbH, SWITZERLAND)	*LARGE-SCALE SIMULATION OF BUBBLE PLUMES AND SUBSEA HYDROCARBON BLOWOUT JETS*

	SESSION 1 (Conference Room 105 & 106)	SESSION 2 (Conference Room 104)	SESSION 3 (Conference Room 103)	SESSION 4 (Conference Room 101 & 102)
	Turbulence and Multi-Material Flows *(Chairman)*	**CFD-DEM** *(Chairman)*	**Heap Leaching** *(Chairman)*	**Fluidised Beds** *(Chairman)*
2.25	**Andersson, R**. and Helmi, A. (Chalmers University of Technology) COMPUTATIONAL AND EXPERIMENTAL INVESTIGATION OF THE BREAKUP MECHANISM OF BUBBLES AND DROPS IN TURBULENT FLOWS	**Braun, M.,** Srinivasa, M. and Gohel, S. (ANSYS, GERMANY) VALIDATION OF AN EFFICIENT CFD-DEM MODEL FOR LARGE SCALE FLUIDIZED BEDS	**Barker, D.J.,** Parameswaran, G. and Neethling, S.J. (Imperial College London) SPH SIMULATION OF PACKED-BEDS AND COLUMNS APPLIED TO HEAP-LEACHING	**Sharma, A.,** Pareek, V.K., Utikar, R.P., Wang, S., Yang, H. and Zhang, D. (Curtin University) A CFD MODELLING STUDY OF MULTI-PHASE FLOW BEHAVIOUR OF BIOMASS AND BIOCHAR PARTICLES IN A BUBBLING FLUIDIZED BED
2.45	**Hayashi, K.** and Tomiyama, A. (Kobe University) EFFECTS OF NUMERICAL TREATMENT OF VISCOUS AND SURFACE TENSION FORCES ON PREDICTED INTERFACE MOTION	**Hager, A.,** Kloss, C.K., Pirker, S.P. and Goniva, C.G. (Johannes Kepler University Linz) PARALLEL OPEN SOURCE CFD-DEM FOR RESOLVED PARTICLE-FLUID INTERACTION	**Ahmed, S.A.** and Iglauer, S.I. (CSIRO CESRE) BRINE PERMEABILITY PREDICTIONS FOR SAND PACKS AND SANDSTONES USING NAVIER-STOKES EQUATIONS AND THREE-DIMENSIONAL MICRO-TOMOGRAPHY IMAGES OF PORE SPACES	**Chu, K.** and Yu, A.B. (UNSW) A NOVEL CIRCULATING FLUIDIZED BED TO IMPROVE FLUID-SOLIDS CONTACTING
3.05	**Ghasempour, F.,** Andersson, R. and Andersson, B. (Chalmers University of Technology) MULTIDIMENSIONAL TURBULENCE SPECTRA - STATISTICAL ANALYSIS OF TURBULENT VORTICES	**Delaney, G.W.,** Hilton, J.E., Cleary, P.W. and Miller, C. (CSIRO CMIS) COUPLED DEM-CFD APPROACH TO MODELLING NON-SPHERICAL PARTICLE SEDIMENTATION IN 3D	**Mostaghimi, P.,** Tollit, B.S., Neethling, S.J., Gorman, G.J. and Pain, C.C. (Imperial College London) A CONTROL VOLUME FINITE ELEMENT SCHEME FOR ANALYSIS OF HEAP LEACHING	**Srinivas, G.** and Pydi Setty, Y. (National Institute of Technology, INDIA) A STUDY OF CFD MODELLING ON VARIATION OF SOLID FRACTION IN A BATCH FLUIDIZED BED DRYER
3.25	**AFTERNOON TEA** Conference Foyer, MCEC, Melbourne			

	SESSION 1 (Conference Room 105/6)	SESSION 2 (Conference Room 104)	SESSION 3 (Conference Room 103)	SESSION 4 (Conference Room 101 & 102)
		Liquid-Particle Flows *(Chairman)*	**Combined Modelling Approaches** *(Chairman)*	**Industrial Applications** *(Chairman)*
3.55		**Kriebitzsch, S.H.L.,** van der Hoef, M.A. and Kuipers, J.A.M. (Eindhoven University of technology) FULLY RESOLVED SIMULATION OF FLOWS WITH NON-SPHERICAL PARTICLES USING AN IMMERSED BOUNDARY METHOD	**Lemiate, V.L.,** Mead, S.R. and Cleary, P.W. (CSIRO CMIS) NUMERICAL MODELLING OF LANDSLIDE EVENTS USING A COMBINATION OF CONTINUUM AND DISCRETE METHODS	**Allen, P.,** White, M., Haywood, R., Anderson, B., O'Farrell, R. and Hobson, R. (Hatch) CFD APPLICATIONS AT PALMER NICKEL AND COBALT REFINERY
4.15		**Derksen, J.J.** (Uni. Alberta) HIGHLY RESOLVED SIMULATIONS OF SOLIDS SUSPENSION IN A MIXING TANK	**Cosentino, F.,** Gebelin, J.C., Warnken, N. and Reed, R.C. (University of Birmingham) MULTI-SCALE MODELLING OF HIGH PRESSURE GAS FAN QUENCHING FOR GAS TURBINE APPLICATIONS	**Hasan, N**. (Don Computing) VALIDATION OF CFD MODELS USING FLOW3D FOR A SUBMERGED LIQUID JET
4:35	**Vendors Forum** *(Chairman)*		*CONFERENCE ROOM 105 & 106*	
5.30	**POSTER SESSION**		*CONFERENCE FOYER, MCEC, MELBOURNE*	

5.30	**POSTER SESSION**	Conference Foyer, MCEC, Melbourne		
	Guo, B.Y., Ye, X.L., Liu, D.D. and Yu, A.B. (UNSW) APPLICATION OF MULTI-SCALE APPROACH IN THE GAS FLOW SIMULATION THROUGH ELECTROSTATIC PRECIPITATORS	**Pereira, G.G.** and Dhondi, S. (CSIRO CMIS) EFFECT OF MOLECULAR WEIGHT ON CAPILLARY ABSORPTION OF POLYMER DROPLETS	**Hilton, J.E**. (CSIRO CMIS) A MULTIPHASE FLUID-SOLID MODEL BASED ON THE LEVEL SET METHOD	**Lau, P.,** Li, Z., Potthoff, M. and Kind, M. (Institute of Thermal Process Engineering, Karlsruhe Institute of Technology) CFD-PBE SIMULATION FOR AN INDUSTRIAL GRANULATION PROCESS WITH SCREENING-CRUSHING
	Kubicki, D. and Lo, S. (CD-Adapco) CFD PREDICTIONS OF SOLIDS DISTRIBUTION IN STIRRED VESSEL	**Chu, K.,** Kuang, S.B., Yu, A.B. and Vince, A. (UNSW) CFD-DEM STUDY OF THE MULTIPHASE FLOW IN A DENSE MEDIUM CYCLONE: PREDICTION OF WEAR	Mandich, K.M. and **Cattolica, R.J.** (UCSD MAE) STABILITY OF GAS-FLUIDIZED BEDS	Shah, M.T., **Utikar, R.P.**, Tade, M.O., Evans, G.M. and Pareek, V.K. (Curtin University) EFFECT OF A CLUSTER ON GAS-SOLID DRAG FROM LATTICE BOLTZMANN SIMULATIONS
	Stephens, D.W. and Fawell, P.D. (Applied CCM) OPTIMISATION OF PROCESS EQUIPMENT USING GLOBAL SURROGATE MODELS	Almaraz, A., Salas, E., Barron, M.A., Cuenca, R.C., Jaramillo, D., Reyes, F. and **Plasencia, G**. (CIITEC-IPN) MODELLING OF FLUID FLOW IN A PS CONVERTER WITH ONE AND THREE INJECTION POINTS	**Verrelli, D.I.** (CSIRO CPSE) LOCALISED INDUCEMENT OF BUBBLE SURFACE MOBILITY DUE TO MOTION OF A NEARBY PARTICLE	Harrison, S.M., **Cohen, R.C.Z.,** Cleary, P.W., Barris, S. and Rose, G. (CSIRO CMIS) FORCES ON THE BODY DURING ELITE COMPETITIVE PLATFORM DIVING
	Karimi, M.K., Akdogan, G.A., Dellimore, K.H. and Bradshaw, S.M. (Stellenbosch University) QUANTIFICATION OF NUMERICAL AND MODEL UNCERTAINTIES IN THE CFD SIMULATION OF THE GAS HOLDUP AND FLOW DYNAMICS IN A LABORATORY SCALE RUSHTON-TURBINE FLOTATION TANK	**Saito, Y.,** Soma, T., Sagawa, R., Matsushita, Y., Aoki, H., Daikoku, M., Shirota, M.P. and Inamura, T. (Tohoku University) COMPARISON OF SOLUTION ALGORITHM FOR FLOW AROUND A SQUARE CYLINDER	**Yu, J.,** Cao, Y., Tian, Z.F., Xue, Y. and Nathan, G.J. (The University of Adelaide) CFD MODELLING OF THE AERODYNAMICS IN A SOLAR - ENHANCED VORTEX GASIFIER (SVG) - PART II. A PRELIMINARY STUDY OF THE LOCATIONS OF SEAL GAS INLETS	**Xing, M.,** Guo, B.Y. and Yu, A.B. (UNSW) EFFECT OF ELECTROHYDRODYNAMIC SECONDARY FLOW ON THE PARTICLE COLLECTION IN A WIRE-PLATE ELECTROSTATIC PRECIPITATOR
	Karimi, M.K., Akdogan, G.A., Bradshaw, S.M. and Mainza, A. (Stellenbosch University) NUMERICAL MODELLING OF AIR CORE IN HYDROCYCLONES	**Guo, B.Y.,** Yu, A.B., Li, L.F. and Ye, X.L. (UNSW) GAS-POWDER FLOW SIMULATION IN AN ESP UNIT WITHOUT ELECTRIC FIELD	**Shi, H.,** Tian, Z.F., Lanspeary, P. and Kelso, R.M. (The University of Adelaide) NUMERICAL STUDY OF EFFECTS OF CENTRE BODY ON PERFORMANCE OF A FAN-DISCHARGE DIFFUSER	**Zou, Y.,** Tingting, M.A., Wang, Y., Sun, J. and Fei, W. (Tsinghua University, China) COMPUTATIONAL FLUID DYNAMIC (CFD) SIMULATION OF FLUID FLOW IN A MIXER-SETTLER EXTRACTOR FOR RARE EARTH METAL SEPARATION
5.30	**Happy Hour – Drinks**	Conference Foyer, MCEC, Melbourne		
7.00	**FINISH**			

Day 2 - Tuesday, 11 December

8.30	**REGISTRATION**	Conference Foyer, MCEC, Melbourne		
PLENARY SESSION *(Chairman)*		Conference Room 105 & 106		
9.00	**Keynote Lecture** **Martin Sommerfeld** and Lain, S. (Martin-Luther University, Halle-Wittenberg, GERMANY)	*ANALYSIS OF DILUTE PHASE PNEUMATIC CONVEYING THROUGH PIPE SYSTEMS BY THE EULER/LAGRANGE APPROACH*		
	SESSION 1 **(Conference Room 105 & 106)**	**SESSION 2** **(Conference Room 104)**	**SESSION 3** **(Conference Room 103)**	**SESSION 4** **(Conference Room 101 & 102)**
	Casting and Solidification *(Chairman)*	**Gas-Solid Flows Mini-Symposium** *(Chairman)*	**Granulation and Atomisation** *(Chairman)*	**Hydrometallurgy** *(Chairman)*
9.55	**Nastac, L.** and Marsden, K. (The University of Alabama) CFD MODELLING OF MACRO-SEGREGATION AND SHRINKAGE IN LARGE DIAMETER STEEL ROLL CASTINGS: A COMPARISON OF SEN AND DLP TECHNIQUES	**Hilton, J.E.** and Cleary, P.W. (CSIRO CMIS) COMPARISON OF RESOLVED AND COARSE GRAIN DEM MODELS FOR GAS FLOW THROUGH PARTICLE BEDS	**Pan, Y.,** Witt, P.J., Kuan, B. and Xie, D. (CSIRO CPSE) EFFECT OF FLOW AND OPERATING PARAMETERS ON THE SPREADING OF A VISCOUS LIQUID ON A SPINNING DISC	**Lane, G.L.,** Mohanarangam, K. and Yang, W. (CSIRO CMIS) ASSESSMENT OF THE FLOW PATTERN IN A SOLVENT EXTRACTION SETTLER
10.15	**Ramirez Lopez, P.E**., Bjorkvall, J., Sjostrom, U., Lee, P.D., Mills, K.C., Jonsson, B., Janis, J., Petajajarvi , M. and Pirinen, J. (Swerea MEFOS AB) EXPERIMENTAL VALIDATION AND INDUSTRIAL APPLICATION OF A NOVEL NUMERICAL MODEL FOR CONTINUOUS CASTING OF STEEL	**Wahyudi, H.,** Chu, K.W. and Yu, A.B. (UNSW) CFD-DEM STUDY OF THE GAS-SOLIDS FLOWS IN A FLUIDIZED BED WITH AN IMMERSED CYLINDER: COMPARISON OF PSEUDO-2D AND 3D MODELS	**Fung, M.C.,** Inthavong, K., Yang, W. and Tu, J.Y. (RMIT University) EXPERIMENTAL AND NUMERICAL MODELLING OF NASAL SPRAY ATOMISATION	**Karimi, M.K.,** Akdogan, G.A., Dellimore, K.H. and Bradshaw, S.M. (Stellenbosch University) COMPARISON OF DIFFERENT DRAG COEFFICIENT CORRELATIONS IN THE CFD MODELLING OF A LABORATORY-SCALE RUSHTON-TURBINE FLOTATION TANK
10.35	**MORNING TEA**	Conference Foyer, MCEC, Melbourne		

	SESSION 1 (Conference Room 105 & 106)	SESSION 2 (Conference Room 104)	SESSION 3 (Conference Room 103)	SESSION 4 (Conference Room 101 & 102)
	Thickeners *(Chairman)*	**Gas-Solid Flows Mini-Symposium** *(Chairman)*	**Numerical Methods** *(Chairman)*	**Hydrometallurgy** *(Chairman)*
11.10	**Tanguay, M.T.,** Fawell, P.D. and Adkins, S.J. (CSIRO CMIS) MODELLING THE IMPACT OF TWO DIFFERENT FLOCCULANTS ON THE PERFORMANCE OF A THICKENER FEEDWELL	Schneiderbauer, S., **Schellander, D**. and Pirker, S.P. (Johannes Kepler University, Austria) A FILTERED FRICTIONAL-KINETIC MODEL FOR GAS-SOLID FLUIDIZED AND MOVING BEDS	**Mead, S.R.,** Cleary, P.W. and Robinson, G.K. (CSIRO CMIS) CHARACTERISING THE FAILURE AND REPOSE ANGLES OF IRREGULARLY SHAPED THREE-DIMENSIONAL PARTICLES USING DEM	**Ghodrat, M.,** Kuang, S.B., Yu, A.B., Vince, A., Barnett, G.D. and Barnett, P.J. (UNSW) CFD STUDY OF THE MULTIPHASE FLOW IN CLASSIFYING HYDROCYCLONE: EFFECT OF CONE GEOMETRY
11.30	**Derksen, J.J.** (Uni. Alberta) DIRECT SIMULATIONS OF FLOCCULATION IN SEDIMENTING SOLID-LIQUID SUSPENSIONS	**Viduka, S.,** Feng, Y.Q., Hapgood, K. and Schwarz, M.P. (Monash University) CFD-DEM INVESTIGATION OF PARTICLE SEPARATIONS USING A TRAPEZOIDAL JIGGING PROFILE	**Nebauer, J.R.A.** and Blackburn, H.M. (Monash University) FLOQUET STABILITY OF TIME PERIODIC PIPE FLOW	**Song, T.,** Feng, Y.Q., Zhou, J. and Jiang, k. (CSIRO CMIS) NUMERICAL SIMULATION OF GAS-LIQUID FLOW IN GAS-AGITATED TANKS
11.50	**Heath, A.R.** (Outotec) VALIDATION OF TURBODIL FLOW PREDICTIONS	**Love, A.,** Giddings, D. and Power, H. (University of Nottingham) NUMERICAL ANALYSIS OF THE INTERACTION OF PARTICLE FLOWS WITH THE VORTEX DYNAMICS IN A DOUBLE EXPANSION	Jemcov, A. and **Stephens, D.W.** (University of Notre Dame) TOPOLOGICAL DERIVATIVE FORMULATION FOR SHAPE SENSITIVITY IN INCOMPRESSIBLE TURBULENT FLOWS	Wadnerkar, D., **Utikar, R.P**., Tade, M.O. and Pareek, V.K. (Curtin University) SIMULATION OF SOLID-LIQUID FLOW IN STIRRED TANKS AT HIGH SOLID LOADING
12.10	**Shelke, N.M.,** Mali, K.V. and Joshi, S.V. (University of Pune, INDIA.) CFD ANALYSIS OF SHORT RETENTION TIME CLARIFIER	**Sanchez, R.A.** and Jakobsen, H.A. (Norwegian University of Science and Technology) SIMULATION OF SORPTION ENHANCED STEAM METHANE REFORMING AND CHEMICAL LOOPING REFORMING IN A CIRCULATING FLUIDIZED BED REACTOR	**Vo, T.,** Montabone, L. and Sheard, G.J. (Monash University) LINEAR INSTABILITIES ON MODEL POLAR VORTICES GENERATED IN A DIFFERENTIAL-DISK ROTATION CONFIGURATION	
12.30	**LUNCH** Conference Foyer, MCEC, Melbourne			

PLENARY SESSION *(Chairman)*		Conference Room 105 & 106			
1.30	**Keynote Lecture** **Rajat Mittal,** (Johns Hopkins Uni., USA)	*CARDIAC FLUID DYNAMICS: FROM COMPUTATIONAL MODELS AND FLOW PHYSICS TO DIAGNOSIS AND SURGICAL INTERVENTION*			
	SESSION 1 **(Conference Room 105 & 106)**	**SESSION 2** **(Conference Room 104)**	**SESSION 3** **(Conference Room 103)**	**SESSION 4** **(Conference Room 101 & 102)**	
	Bio-Engineering Mini-Symposium *(Chairman)*	**Gas-Solid Flows Mini-Symposium** *(Chairman)*	**Aluminium and Alumina** *(Chairman)*	**Emerging Science** *(Chairman)*	
2.25	**Liovic, P.,** Sutalo, I.D., Stewart, R.L., Glattauer, V. and Meagher, L. (CSIRO CMIS) FLUID FLOW AND STRESSES ON MICROCARRIERS IN SPINNER FLASK BIOREACTORS	**Smuts, E.M.,** Deglon, D.A. and Meyer, C.J. (University of Cape Town) METHODOLOGY FOR CFD-DEM MODELLING OF PARTICULATE SUSPENSION RHEOLOGY	**Witt, P.J.,** Feng, Y.Q., Eick, I. and Schwarz, M.P. (CSIRO CMIS) MODELLING BUBBLE FLOW WITH CFX AND FLUENT FOR ALUMINIUM REDUCTION CELLS	**Saunders, K.,** Prakash, M., Cleary, P.W. and Cordell, M. (CSIRO CMIS) SPH MODELLING OF WEIR FLOW THROUGH A FOUR BAY, RADIAL GATED, SUBMERGED SPILLWAY	
2.45	**Assemat, P.,** Hough, J., Siu, K.K., Armitage, J.A., Contreras, K.G., Aprico, A., Andrews, K., Dart, A., Chin-Dusting, J. and Hourigan, K. (Monash University) THREE- DIMENSIONAL NUMERICAL SIMULATION OF BLOOD FLOW IN MOUSE AORTIC ARCH AROUND ATHEROSCLEROTIC PLAQUES	Zhou, Q. and **Wang, J.** (Institute of Process Engineering, Chinese Academy of Sciences) EFFECTS OF MICROSCOPIC DRAG CORRELATIONS AND RESTITUTION COEFFICIENT ON THE CHARACTERISTICS OF MESO-SCALE CLUSTERING STRUCTURES IN RISER FLOWS	**Brown, G.J.,** Whyte, D.S. and Fletcher, D.F. (Alcoa World Alumina) DYNAMIC FLOW MODELLING IN PRECIPITATOR VESSELS - A COMPARATIVE STUDY OF TURBULENCE MODELLING APPROACHES	**Lester, D.R.,** Smith, L.D., Metcalfe, G. and Rudman, M. (CSIRO CMIS) BEYOND HAMILTONIAN: CHAOTIC ADVECTION IN A THREE-DIMENSIONAL VOLUME PRESERVING FLOW	
3.05	**Sinnott, M.D.,** Harrison, S.M., Phan, T., Beare, R., Srikanth, V. and Cleary, P.W. (CSIRO CMIS) INVESTIGATING ARTERIAL GEOMETRY RISK FACTORS FOR CAROTID ARTHEROSCLEROTIC DISEASE	**Afshar, S.** and Sheehan, M. (James Cook University) USING CFD TO SIMULATE HEAT TRANSFER IN PARTICLE CURTAINS	Zhang, K.Y., **Feng, Y.Q.,** Witt, P.J., Yang, W., Cooksey, M., Wang, Z. and Schwarz, M.P. (CSIRO CMIS) NUMERICAL INVESTIGATION OF BUBBLE INDUCED ELECTRICAL RESISTANCE IN ALUMINIUM REDUCTION CELLS	**Karunanithi, K**. (Macquarie Uni.) RISK STRATIFICATION OF CEREBROVASCULAR ANEURYSMS USING CFD-A REVIEW	
3.25	**AFTERNOON TEA** Conference Foyer, MCEC, Melbourne				

	SESSION 1 (Conference Room 105 & 106)	SESSION 2 (Conference Room 104)	SESSION 3 (Conference Room 103)	SESSION 4 (Conference Room 101 & 102)
	Bio-Engineering Mini-Symposium *(Chairman)*	**Granular Flow** *(Chairman)*	**Heat Transfer** *(Chairman)*	**Lattice-Boltzmann** *(Chairman)*
3.55	**Prakash, M.,** Nikolof, T., Cleary, P.W. and Bertolini, J. (CSIRO CMIS) SIMULATION OF FLOW IN A HELICAL DEVICE USED FOR IRRADIATING BIOLOGICAL FLUIDS	**Shirsath, S.S.,** Padding, J.T., Clercx, H.J.H. and Kuipers, J.A.M. (Eindhoven University of Technology) MODELLING OF GRANULAR FLOWS THROUGH INCLINED ROTATING CHUTES USING A DISCRETE PARTICLE MODEL	**Heschl, H.C.,** Inthavong, K. and Tu, J.Y. (Uni. Applied Science Burgenland, AUSTRIA) EVALUATION OF EDDY VISCOSITY TURBULENCE MODELS TO PREDICT CONVECTIVE HEAT TRANSFER	**Kroll-Rabotin, J.S.,** Sungkorn, R., Hashemi, S.A., Derksen, J.J. and Sanders, R.S. (University of Alberta) LARGE EDDY SIMULATION OF A SOLID-LIQUID FLUIDIZED BED USING THE LATTICE-BOLTZMANN METHOD AND A SOFT-SPHERE COLLISION MODEL
4.15	**Li, X.D.,** Ge, Q.J. and Tu, J.Y. (RMIT University) NUMERICAL INVESTIGATION OF PARTICLE INHALATION FROM AMBIENT ENVIRONMENT AND DEPOSITION IN HUMAN NASAL CAVITY USING AN INTEGRATED MANIKIN MODEL	**Pereira, G.G.** and Cleary, P.W. (CSIRO CMIS) SEGREGATION OF A MULTI-COMPONENT GRANULAR MIXTURE IN A ROTARY CLASSIFIER	**Erakovic, L.E.** and Evans, B.E. (GHD) USE OF PMV CONTROL TO IMPROVE ENERGY EFFICIENCY IN COMFORT COOLING APPLICATIONS	**Rojas, R.,** Seta, T., Hayashi, K. and Tomiyama, A.T. (Kobe University) IMMERSED BOUNDARY-FINITE DIFFERENCE LATTICE BOLTZMANN METHOD USING TWO RELAXATION TIMES
4.35	**FINISH**			
6:00	**PRE-DINNER DRINKS**	Showtime Events, 61 South Wharf promenade, South Wharf, Melbourne		
6:00 to 10.00	**CONFERENCE DINNER**	Showtime Events, 61 South Wharf promenade, South Wharf, Melbourne		

Day 3 - Wednesday, 12 December					
8.30	**REGISTRATION**	Conference Foyer, MCEC, Melbourne			
PLENARY SESSION *(Chairman)*		Conference Room 105 & 106			
9.00	**Keynote Lecture** Ken Williams and **Scott Thibault** (CPFD Software, USA)	*PREDICTING UNEXPECTED BEHAVIOUR IN INDUSTRIAL DEEP-BED FLUIDIZATION REACTORS AND DEVELOPING ENGINEERED SOLUTIONS WITH CFD*			
	SESSION 1 **(Conference Room 105 & 106)**	**SESSION 2** **(Conference Room 104)**	**SESSION 3** **(Conference Room 103)**	**SESSION 4** **(Conference Room 101 & 102)**	
	Micro-fluidics, Bubble & Drops *(Chairman)*	**Gas-Solid Flows Mini-Symposium** *(Chairman)*	**Combustion: Coal Seams** *(Chairman)*	**Gas Flows** *(Chairman)*	
9.55	**Berry, J.D.,** Davidson, M.R. and Harvie, D.J.E. (The University of Melbourne) ELECTROVISCOUS FLOW THROUGH A MICROFLUIDIC T-JUNCTION	**Cao, Y.,** Tian, Z.F. and Nathan, G.J. (The University of Adelaide) CFD MODELLING OF THE AERODYNAMICS IN A SOLAR-ENHANCED VORTEX GASIFIER (SVG) - PART1. VALIDATION CASE	Guo, H., **Qin, J.** and Qu, Q. (CSIRO ESRE) CFD INVESTIGATION OF GOAF FLOW OF METHANE RELEASED FROM UNMINED ADJACENT COAL SEAMS	**Awadalla, M.A.,** Lu, T.F., Tian, Z.F. and Dally, B. (The University of Adelaide) CFD MODELING OF 3D INDOOR GAS CONTAMINANT PLUMES FOR TESTING SEARCH ALGORITHMS FOR MOBILE ROBOT	
10.15	**Manica, R.M.,** Klaseboer, E., Gupta, R.P., Hendrix, M.H.W., Ohl, C. and Chan, D.Y.C. (Institute of High Performance Computing, SINGAPORE) MODELLING FILM DRAINAGE OF A BUBBLE HITTING AND BOUNCING OFF A SURFACE	**Mitra, S.,** Sathe, M.J., Doroodchi, E. and Evans, G.M. (University of Newcastle) NVESTIGATION OF DROPLET EVAPORATION IN A BUBBLING FLUIDIZED BED	**Tanguturi, K.,** Balusu, R., Morla, R. and Khanal, M. (CSIRO CESRE) EFFECT OF BUOYANCY ON METHANE GAS DISTRIBUTION AND GAS CONTROL STRATEGIES AT TAILGATE REGION IN A GASSY COAL MINE	**Wen, C.,** Feng, Y.Q., Witt, P.J., Yang, Y. and Cao, X. (China University of Petroleum) CFD SIMULATION OF SUPERSONIC SWIRLING SEPARATION OF NATURAL GAS USING A DELTA WING	
10.35	**MORNING TEA**	Conference Foyer, MCEC, Melbourne			

	SESSION 1 (Conference Room 105 & 106)	SESSION 2 (Conference Room 104)	SESSION 3 (Conference Room 103)	SESSION 4 (Conference Room 101 & 102)
	Micro-fluidics, Bubbles & Drops *(Chairman)*	**Gas-Solid Flows Mini-Symposium** *(Chairman)*	**Combustion** *(Chairman)*	**Optimisation & Performance** *(Chairman)*
11.10	**Verrelli, D.I.,** Lee, A., Schwarz, M.P. and Koh, P.T.L. (CSIRO CPSE) FORCES ARISING DURING BUBBLE-PARTICLE INTERACTION	**Plais, C.** (IFPEN) UPWARD JET PENETRATION IN FLUIDIZED BEDS : CFD PREDICTIONS COMPARED TO EXPERIMENTAL RESULTS	**Zhang, J.Z.,** Prationo, W.P., Zhang, L.Z. and Zhang, Z.Z. (Monash University) CFD MODELING OF THE OXY-FUEL COMBUSTION OF VICTORIAN BROWN COAL IN DROP TUBE FURNACE AND 3MW PILOT SCALE BOILER	Horgan, M. and **Brown, G.J.** (Alcoa World Alumina) APPLICATION OF DESIGN OPTIMISATION TO ESP PARTICLE CAPTURE
11.30	**Klaseboer, E.,** Manica, R.M. and Chan, D. (Institute of High Performance Computing, SINGAPORE) RISING AND BOUNCING BUBBLES AGAINST A BOUNDARY WITH BEM; THE EFFECT OF VISCOUS STRESSES	**Tan, L.** and van Sint Annaland, M. (Eindhoven University of technology) SIMULATION STUDY ON THE HYDRODYNAMIC CHARACTERISTICS OF MEMBRANE-ASSISTED MICRO-FLUIDIZED BEDS	Al-Abbas, A.H., **Naser, J.** and Blicblau, A. (Swinburne University) COMPUTATIONAL FLUID DYNAMICS MODELLING OF CHEMISTRY REACTION SCHEMES IN A LAB-SCALE OXY-FUEL FURNACE	**Harrison, S.M.,** Gunn, D.F. and Cleary, P.W. (CSIRO CMIS) KAYAK PERFORMANCE MODELLING USING SPH
11.50	**van Eijkeren, D.F.** and Hoeijmakers, H.W.M. (University of Twente) HISTORY FORCE AND INERTIA EFFECTS APPLIED TO SWIRLING FLOW PRODUCED WATER TREATMENT	**Solnordal, C.B.** and Wong, C.Y. (CSIRO CMIS) PREDICTING SURFACE PROFILE EVOLUTION CAUSED BY SOLID PARTICLE EROSION	**Christo, F.C.,** Nathan, G.J. and Kelso, R.M. (University of South Australia) EFFECT OF AN EXTERNAL FLOW ON COMBUSTION IN A TRAPPED-VORTEX BURNER	**Pvs, Kiran Kumar,** Papadikis, K. and Gu, S. (Xi'an Jiao tong-Liverpool University, CHINA) HYDRODYNAMIC MODELLING OF A DIRECT CONTACT HEAT EXCHANGER USED FOR BIO OIL CONDENSATION
12.10	**Olsen, J.E.** and Popescu, M. (SINTEF) ON THE EFFECT OF LIFT FORCES IN BUBBLE COLUMNS	**Deju, L.,** Cheung, S.C.P., Yeoh, G.H. and Tu, J.Y. (RMIT University) AN ASSESSMENT OF MECHANISTIC BREAKAGE AND COALESCENCE KERNELS IN POLY-DISPERSED MULTIPHASE FLOW		
12.30	**LUNCH** Conference Foyer, MCEC, Melbourne			

PLENARY SESSION *(Chairman)*		Conference Room 105 & 106
1.30	**Keynote Lecture** **Markus Braun** (ANSYS Germany GmbH)	*FROM SINGLE PARTICLE TRACKING TO MASSIVELY PARALLEL MULTIPHASE FLOW SIMULATION*
2.25	**Panel Discussion – Emerging and Future Trends in CFD** *(Chairman)*	*CONFERENCE ROOM 105 & 106*
3.30	**Closing Ceremony (Conference Room 106)** **Presentation of Student Prizes**	
3:40	**AFTERNOON TEA**	Conference Foyer, MCEC, Melbourne