

Day 1 (Tuesday, June 21st)

Morning sessions: 8:55 – 13:15

Time	AUDITORIUM R5	AUDITORIUM R7	AUDITORIUM R8	AUDITORIUM R9
8:00 – 8:30	Registration			
8:30 – 8:35	Chairman's welcome address, Stein Tore Johansen, SINTEF (auditorium R7)			
8:35 – 8:55	Opening address: <i>Panta rei – (un)fortunately!</i> Ruben Schulkes, Statoil (auditorium R7)			
8:55 – 9:40		Keynote: Jos Derksen, Univ.of.Alberta, Canada DENSE SUSPENSIONS – THE RICHNESS OF SOLID-LIQUID INTERACTIONS AT THE PARTICLE SCALE		
9:45-11:15	Session R5-01: Furnace Modelling Chairman: Alireza Ashrafian	Session R7-01: Oil-water Separation Chairman: Jos Derksen	Session R8-01: Gas-Particle Flows Chairman: Gerald Pereira	Session R9-01:Population Balance Chairman: John Morud
9:45-10:15	<u>Lead paper:</u> 122: CFD SIMULATION OF A HIGH TEMPERATURE FURNACE, Harasek, Nagy, Horvath & Jordan	<u>Lead Paper:</u> 060: INSOLUBLE SURFACTANT EFFECTS ON EMULSION COARSENING IN A GRAVIT-ATIONAL FIELD VIA PHASE-FIELD TERNARY MIXTURE MODEL, Lamorgese & Banerjee	<u>Lead paper:</u> 086: MODELLING DISPERSION OF A HIGHLY LADEN POWDER JET, Pirker, Puttinger & Habermann	<u>Lead paper:</u> 109: SOLUTION OF THE POPULATION BALANCE EQUATION USING NQMOM, Attarakih, Kuhnert, Wächtler, Abu-Khader & Bart
10:15-10:35	095: INTEGRATED CFD AND PROCESS MODELLING FOR IMPROVED PROCESS DESIGN Runstedtler, Boisvert, Majeski, Gao & Tisdale	111: HISTORY FORCE AND DRAG CORRELATION IN A LAGRANGIAN METHOD APPLIED TO OIL-WATER SEPARATION, van Eijkeren & Hoeijmakers	91: A MODEL OF PARTICLE DEPOSITION ON A VERTICAL WALL FOR THE PARTICLE-WALL STICKING PROBABILITY LOWER THAN ONE, Eskin, Ratulowski, & Akbarzadeh	902: EULERIAN EQUILIBRIUM LES MODEL FOR POLYDISPERSED PARTICLE LADEN CHANNEL FLOW, Icardi, Marchisio & Narayanan
10:35-10:55	151 : THE APPLICATION OF CFD AND OVEN DESIGN OPTIMISATION IN THE BRITISH BREAD-BAKING INDUSTRY, Khatir,Thompson,Kapur,Toropov,Paton & Lawes	906: HYDRODYNAMIC STUDY OF A CONTINUOUS HORIZONTAL LIQUID-LIQUID SETTLER, Salim,Masbernat, Roig & Bech	142: APPLICATION OF A COMBINED CFD/EXPERIMENTAL APPROACH TO QUANTIFYING EROSION RATE, Solnordal & Wong	090: IMPLEMENTATION OF THE QUADRATURE METHOD OF MOMENTS IN A 3D CFD PIPE GEOMETRY, Hutton, Stephens & Livk
10:55-11:15	088: INFLUENCE OF POST COMBUSTION ON CHARACTERISTICS OF OXYGEN JET IN BOF, Kaizawa, Sasaki, Inomoto & Ogawa	121: IN-LINE OIL-WATER SEPARATION IN SWIRLING FLOW, Slot & Hoeijmakers	166: DUST DISPERSAL MODELLING ON A CONVEYOR CHUTE USING A COUPLED DEM AND CFD METHOD, Hilton & Cleary	
11:15-11:45	Coffee Break			
11:45-13:15	Session R5-02: Numerical Methods Chairman: Bernhard Müller	Session R7-02: Biomechanics Chairman: Leif Rune Hellevik	Session R8-02: Pipe & Channel Flow Chairman: Dmitry Eskin	Session R9-02: Modelling Concepts Chairman: Akio Tomiyama
11:45-12:15	<u>Lead paper:</u> 127: EFFICIENT SOLUTION METHOD FOR THE STOKES EQUATIONS WITH VARIABLE VISCOSITY AND PERIODIC BC. van Zwieten, van Gijzen, Vuik, van Male, & Fraaije	<u>Lead paper:</u> 145: INVESTIGATIONS OF TRANSITIONAL FLOWS USING IMAGE BASED HEMODYNAMICS, Valen-Sendstad et.al.	<u>Lead paper:</u> 920: LedaFlow-Q3D: A TRANSIENT MULTIDIMENSIONAL CFD TOOL FOR SIMULATION OF MULTIPHASE FLOW IN STRAIGHT AND CURVED PIPES, Ashrafian & Johansen et al.	<u>Lead paper:</u> 135: ON THE MODELLING OF ANODIC BUBBLES IN HALL-HÉROULT CELLS, Einarsrud & Johansen
12:15-12:35	094: LATTICE BOLTZMANN MICROCHANNEL SIMULATIONS VIA BINARY LIQUID MODEL, Kuzmin, Derksen & Eskin	153: POROUS AND VISCOUS FLOW MODELING ON THE STUDY OF CYST DEVELOPMENT IN THE HUMAN SPINAL CORD, Drøsdal et.al.	083: NUMERICAL SIMULATION OF AN HORIZONTAL COUNTER-CURRENT TWO-PHASE FLOW EXPERIMENT USING AN INTERFACIAL AREA DENSITY MODEL, Höhne & Lucas	101: MECHANISTIC MODELLING OF PARTICLE-INTERFACE INTERACTION IN THREE-PHASE FLOWS, Wierink, Goniva, Niceno & Heiskanen
12:35-12:55	129: AN IMPROVED ROE SOLVER FOR THE DRIFT-FLUX TWO-PHASE FLOW MODEL, Flåtten & Reigstad	905: IMPACT OF COMPETITIVE FLOW ON WALL SHEAR STRESS IN CORONARY SURGERY, Nordgaard et.al.	119: NUMERICAL SIMULATION OF LARGE BUBBLES IN CHANNELS USING A FRONT TRACKING METHOD, Hor, Hua, Spelt & Lawrence	103: NUMERICAL STUDY OF THE WALL EFFECT ON THE LIQUID DISTRIBUTION IN A TRICKLE-BED REACTOR, Martinez, Pallares, Lopez, Garcia & Grau
12:55-13:15	136: UNSTRUCTURED MESH OF A DISC USING MULTIPLE TRANSFINITE MAPPINGS, Sporleder, Dorao & Jakobsen	907: SIMULATING THE BLOOD FLOW IN CORONARY LIMA-TO-LAD BYPASSES USING AN ENHANCED BOUNDARY CONDITION MODEL, de Witte et.al.	097: A FLOWMETER BASED ON THE MEASUREMENT OF THE LOCAL HEAT TRANSFER COEFFICIENT AT THE FORWARD STAGNATION POINT OF A HEATED SPHERE PLACED IN A TURBULENT PIPE FLOW, Koizumi	087: MODELLING FLOW INDUCED AOD-CONVERTER SLOSHING BY ANALYTICAL CONSIDERATIONS, NUMERICAL SIMULATION AND COLD WATER EXPERIMENTS, Pirker & Wimmer
13:15-14:15	Lunch¹			

Day 1 (Tuesday, June 21st)

Afternoon sessions: 14:15 – 17:15

Time	AUDITORIUM R5	AUDITORIUM R7	AUDITORIUM R8
14:15-15:10		Keynote: Frans van de Vosse, Eindhoven Univ. Tech., NL CARDIOVASCULAR FLUID STRUCTURE INTERACTION	
15:15-16:45	Session R5-03: Population Balance Method Chairman: Daniele Marchisio	Session R7-03: Biomechanics Chairman: Frans van de Vosse	Session R8-03: Oil & Gas Applications Chairman: Knut Bech
15:15-15:45	<u>Lead paper:</u> 092: LARGE EDDY SIMULATION OF PARTICLE-LADEN SWIRLING FLOW WITH A PRESUMED FUNCTION METHOD OF MOMENTS, Dems, Carneiro & Polifke	<u>Lead paper:</u> 096: HIGH ORDER NUMERICAL SIMULATION OF FLUID-STRUCTURE INTERACTION IN THE HUMAN LARYNX, Larsson & Müller	<u>Lead paper:</u> 195: ANALYSIS OF SUB-SEA GAS RELEASE BY AN EULERIAN-LAGRANGIAN MODELLING CONCEPT, Skjetne & Olsen
15:45-16:05	104: COMPARISON BETWEEN DIFFERENT METHODS FOR TURBULENT GAS-LIQUID SYSTEMS BY USING MULTIVARIATE POPULATION BALANCES, Buffo, Vanni, Marchisio, Fox	118: A STRONG FSI COUPLING SCHEME FOR SIMULATING BMHV DYNAMICS: STUDY OF WALL SHEAR STRESS ON THE VALVE LEAFLETS, Annerel et.al.	161: AUTONOMOUS INFLOW CONTROL DEVICE: CFD SIMULATIONS OF FLUID-STRUCTURE INTERACTION, Gyllensten & Mathiesen
16:05-16:25	133: POPULATION BALANCE MODELLING OF ISOTHERMAL BUBBLY-CAP FLOWS USING TWO-GROUP AVERAGE BUBBLE NUMBER DENSITY APPROACH, Cheung, Yeoh, Krepper & Lucas	904: A BIOMECHANICAL MODEL FOR HUMAN UMBILICAL VEINS AND WHARTON'S JELLY, Leinan et.al.	143: HEAT TRANSFER IN A COLD SPOT ON A SUBSEA PIPELINE DURING SHUT-IN EFFECT OF NATURAL CONVECTION AND GRID RESOLUTION, Sannæs
16:25-16:45	154: IMPLEMENTATION OF THE SECTIONAL QUADRATURE METHOD OF MOMENTS IN FLUENT, Morud	178: FLUID MOTION FOR MICRO-GRAVITY SIMULATION IN A RANDOM POSITIONING MACHINE, Leguy et.al.	146: NUMERICAL MODELLINGS OF OIL SPILL RESPONSE ACTIONS, FLOATING BOOM Aghajanloo & Pirooz
16:45-17:15	Afternoon Coffee		

Day 2 (Wednesday, June 22nd)

Morning sessions: 8:30 – 13:00

Time	AUDITORIUM R5	AUDITORIUM R7	AUDITORIUM R8
8:30-9:25		Keynote: David Le Touzé, Ecole Centrale Nantes, France MESH-FREE LAGRANGIAN MODELLING OF FLUID DYNAMICS	
9:30-11:00	Session R5-04: Separation & Mixing Chairman: Leonard Kleiser	Session R7-04: Particle-Based Methods Chairman: David Le Touzé	Session R8-04: Bubble & Droplet Dynamics Chairman: Akio Tomiyama
9:30-10:00	<u>Lead paper:</u> 107: CFD SIMULATIONS AND MEASUREMENTS OF THE INLINE PHASESPLITTER: A COMPACT GAS/LIQUID SEPARATOR, Westra, de Haas, Salazar & Ibouhouten	<u>Lead paper:</u> 144: LIGGGHTS OPEN SOURCE DEM: MODELS, FEATURES, PARALLELISM AND QUALITY ASSURANCE, Kloss, Goniva, Amberger & Pirker	<u>Lead paper:</u> 158: TOWARDS A COMPUTATIONAL ANALYSIS OF BINARY COLLISIONS OF SHEAR-THINNING DROPLETS, Bothe & Focke
10:00-10:20	084: A CFD STUDY OF THE EFFECT OF CYCLONE BARREL HEIGHT ON ITS PERFORMANCE PARAMETERS, Elsayed & Lacor	162: A MASSIVELY PARALLEL INCOMPRESSIBLE SMOOTHED PARTICLE HYDRODYNAMICS SIMULATOR MOTIVATED BY OILFIELD APPLICATIONS, Dickenson & Dawes	930: EXPERIMENTAL AND NUMERICAL INVESTIGATION OF DROPLET-WIRE INTERACTIONS IN GAS-LIQUID FLOWS Marchetti, Svendsen & Skjetne
10:20-10:40	172: CFD SIMULATION OF HYDROCYCLONE PERFORMANCE UNDER DILUTE OPERATING CONDITIONS, Davailles, Climent & Bourgeois	168: UNDERSTANDING VISCOUS FLUID TRANSPORT AND MIXING IN A TWIN SCREW EXTRUDER, Cleary & Robinson	093: MODELING OF A GAS-LIQUID SLUG FLOW ACCOMPANIED WITH MASS TRANSFER THROUGH A LONG MICROCHANNEL, Eskin & Mostowfi
10:40-11:00	901: NUMERICAL MODELLING OF AN AUTOCLAVE, Appa, Deglon & Meyer	141: A MULTI-PURPOSE OPEN SOURCE CFD-DEM APPROACH, Goniva, Kloss, Hager, Wierink & Pirker	163: MODELING AND 3D SIMULATION OF PHYSICAL MASS TRANSFER AT SINGLE RISING GAS BUBBLES FOR MODERATE SCHMIDT NUMBERS, Bothe & Fleckenstein
11:00-11:30	Coffee Break		
11:30-13:00	Session R5-05: Reactive Flows Chairman: Charles Petty	Session R7-05: Multiphase Pipe Flow Chairman: Stein Tore Johansen	Session R8-05: Fluidized Beds & CLC Chairman: Koulis Pericleous
11:30-12:00	<u>Lead paper:</u> 125: A CFD STUDY OF ENTRAINED-FLOW GASIFIERS USING TWO FEED TYPES, Sreedharan, Hjertaker & Solberg	<u>Lead paper:</u> 167: ADVANCES IN THE SIMULATION OF MULTIPHASE FLOWS IN PIPELINES, Lakehal	<u>Lead paper:</u> 148: GPU-ACCELERATED LARGE-SCALE CFD-DEM COUPLING SIMULATION OF THREE-DIMENSIONAL GAS-SOLID FLUIDIZED BED, Chen, Ge & Li
12:00-12:20	137: CFD MODELING OF SILICA FUME FORMATION DURING REFINING OF SILICON METAL, Olsen, Næss & Tranell	128: NUMERICAL SIMULATION OF SINGLE ELONGATED BUBBLE PROPAGATION IN INCLINED PIPES, Hua, Langsholt & Lawrence	100: THE CHARACTERISTICS OF FLOW AND HEAT TRANSFER IN A CIRCULATING FLUIDIZED BED REACTOR, Choi
12:20-12:40	177: EFFECT OF SIO COMBUSTION ON NOX EMISSION: THEORY AND VALIDATION, Panjwani, Andersson & Midtdal	147: INVESTIGATION OF TWO-PHASE SLUG FLOW IN A RISER USING PHYSICAL AND NUMERICAL SIMULATIONS, Abdulkadir, Hernandez-Perez, Lowndes and Azzopardi	173: DESIGN OF A CHEMICAL LOOPING COMBUSTION SYSTEM USING PROCESS SIMULATION AND COMPUTATIONAL FLUID DYNAMICS, Cloete & Amini
12:40-13:00	099: CFD MODELING STUDY OF A REFINERY HEATER AND COMPARISON TO FIELD DATA, Runstedtler, Landry & Brunet	921: Quasi-3D MODELING OF SLUG FLOW IN HORIZONTAL AND VERTICAL PIPES, Ashrafian, Mo, Dijkhuizen & Johansen	170: A NUMERICAL AND EXPERIMENTAL STUDY OF HYDRODYNAMIC BEHAVIOR OF BISOLID CIRCULATING FLUIDIZED BED, Nouyrigat, .Lalam, .Bouquet, & Simonin
13:00-14:00	Lunch¹		

Day 2 (Wednesday, June 22nd)

Afternoon sessions: 14:00 – 16:40

Time	AUDITORIUM R5	AUDITORIUM R7	AUDITORIUM R8
14:00-14:55		Keynote: Leonhard Kleiser, ETH Zürich, Switzerland LARGE-EDDY SIMULATION OF SEPARATED VORTICAL FLOWS	
15:00-16:30	Session R5-06: Casting & Solidification Chairman: Ernst Meese	Session R7-06: OpenFoam Experiences Chairman: Jozsef Nagy	Session R8-06: Level Set Method Chairman: Dieter Bothe
15:00-15:30	<u>Lead paper:</u> 169: EULER-LAGRANGE MODELING OF MELTING AND SOLIDIFICATION WITH MOVING SOLID PARTICLES, Dierich & Nikrituyk	<u>Lead paper:</u> 115: TESTING OF OPENFOAM CFD CODE FOR PLANE TURBULENT BLUFF BODY FLOWS, Lysenko, Ertesvåg & Rian	<u>Lead Paper:</u> 117: CONSTRAINED REINITIALISATION OF THE CONSERVATIVE LEVEL SET METHOD, Walker & Müller
15:30-15:50	132: STUDY OF THE STEEL/SLAG INTERFACE INSTABILITY AND THE INFLUENCE OF INJECTED GAS IN THE CONTINUOUS CASTING OF STEEL, Pericleous et.al.	149: COMPARISON OF CFD TOOLS FOR MULTIPHASE FLOW APPLICATIONS, Henkes, Singh & Menon	140: DIRECT NUMERICAL SIMULATION OF TWO-FLUID FLOWS WITH A LEVEL-SET METHOD, Voronetska, Vinay, Wachs & Caltagirone
15:50-16:10	085: CFD MODELLING OF TRANSPORT PHENOMENA OCCURING DURING DIRECTIONAL SOLIDIFICATION OF mc-SILICON FOR PHOTOVOLTAIC APPLICATIONS, Dropka & Rehse	909: NUMERICAL SIMULATION OF SPECIES TRANSFER AT GAS-LIQUID INTERFACES USING OpenFoam, Marschall, Schuler, Hinterberger & Hinrichsen	184: THREE DIMENSIONAL NUMERICAL SIMULATION OF BUBBLE AND DROPLET DYNAMICS WITH A PARALLEL PARTICLE LEVEL SET SOLVER, Bihs
16:10-16:40	Afternoon Coffee		
19:00-23:00	Conference Dinner²		

Day 3 (Thursday, June 23rd)

Morning sessions: 8:30 – 13:00

Time	AUDITORIUM R5	AUDITORIUM R7	AUDITORIUM R8
8:30-9:25		Keynote: Tor Ytrehus, NTNU, Norway MOLECULAR-FLOW EFFECTS IN EVAPORATION AND CONDENSATION PHENOMENA	
9:30-11:00	Session R5-07: Discrete Element Method Chairman: Alexandre Lavrov	Session R7-07: Metallurgical Applications Chairman: Alireza Ashrafian	Session R8-07: Fluidized Beds & CCS Chairman: Shahriar Amini
9:30-10:00	<u>Lead paper:</u> 124: PARCEL-BASED APPROACH FOR THE SIMULATION OF GAS-PARTICLE FLOWS, Radl, Radeke, Khinast & Sundaresan	<u>Lead paper:</u> 064: INCLUSION ELIMINATION IN STEELMAKING LADLE, Gardin, Simonnet & Gauthier	<u>Lead paper:</u> 116: MODELLING AND CFD SIMULATION OF A FLUIDIZED BED REACTOR TO CAPTURE CO ₂ BY SOLID SORBENTS, Pericleous, Molaei & Patel
10:00-10:20	155: DE-MIXING OF BINARY PARTICLE MIXTURES DURING UNLOADING OF A V-BLENDER, Pereira & Cleary	150: CFD MODELING OF TAPPING PROCESS IN FERROMANGANESE FURNACES, Kadkhodabeigi, Tveit & Johansen	108: INVESTIGATION OF A FRICTIONAL PARTICLE-PARTICLE DRAG COEFFICIENT IN A DENSE BINARY FLUIDIZED BED, Chao et.al.
10:20-10:40	164: ANALYSIS OF NON-ROUND PARTICULATE MIXING IN A PLOUGH SHARE MIXER USING DEM, Cleary	152: CFD SIMULATION OF SLAG DROPLET FORMATION BY A SPINNING DISC IN DRY SLAG GRANULATION PROCESSES, Pan, Witt, Kuan & Xie	159: MAPPING OF THE OPERATING WINDOW OF A LAB SCALE BUBBLING FLUIDIZED BED REACTOR BY CFD AND DESIGNED EXPERIMENTS, Cloete & Amini
10:40-11:00	165: THREE DIMENSIONAL COUPLED DISCRETE ELEMENT-CFD MODELLING OF HIGH SPEED GAS-PARTICLE RACEWAY DYNAMICS, Hilton & Cleary	176: CFD SIMULATION OF BATH DYNAMICS IN THE HISMELT SMELT REDUCTION VESSEL FOR IRON PRODUCTION, Tabib, Stephens, Schwarz & Davis	102: NUMERICAL SIMULATION OF MULTIPHASE FLOWS OF CO ₂ STORAGE IN SALINE AQUIFERS IN DAQINGZIJIANG OILFIELD, CHINA, Yang, Zeng, Zhang, Wang & Jin
11:00-11:30	Coffee Break		
11:30-13:00	Session R5-08: Chairman:	Session R7-08: Multiphase Flows Chairman: Sanjoy Banerjee	Session R8-08: Porous Media Chairman: Dmitry Eskin
11:30-12:00		<u>Lead paper:</u> 171 : INTERPENETRATING CONTINUA AND MULTIPHASE TURBULENCE, Petty, Muthu, Koppula & Benard	<u>Lead paper:</u> 156: PREDICTION OF PERMEABILITY FOR DEM GENERATED PACKINGS OF SPHERICAL AND NON-SPHERICAL PARTICLES USING SPH AND LB, Pereira, Dupuy, Cleary & Delaney
12:00-12:20		120: TECHNICAL APPLICATION OF A MULTIPHASE SOLVER IN THE COMPRESSIBLE FLOW OF A GASEOUS AND A LIQUID PHASE, Nagy, Harasek & Jordan	174: 3D NUMERICAL STUDY OF THE INFLUENCE OF PARTICLE POROSITY ON THE HEAT AND FLUID FLOW, Wittig & Nikrityuk
12:20-12:40		160: INFLUENCE OF SUBCOOLING ON DENSITY WAVE OSCILLATIONS IN A HEATED PIPE, Strømsvåg, Ruspini, Fernandino & Dorao	106: A COMPARATIVE STUDY OF MASS- AND MOLE BASED MULTICOMPONENT DIFFUSION MODELS IN POROUS PELLETS FOR STEAM METHANE REFORMING PROCESSES, Rout & Jakobsen
12:40-13:00		113: CFD SIMULATION OF GAS-LIQUID FLOW IN BUBBLE COLUMNS BASED ON THE DBS DRAG MODEL, Yang, Wu & Li	131: APPLICATION OF THE LEAST SQUARE METHOD TO THE MULTISCALE TRANSPORT EQUATION IN POROUS MEDIA, Dupuy & Sporleder
13:00-14:00	Lunch¹		

Afternoon sessions: 14:00 – 15:30

Time	AUDITORIUM R5	AUDITORIUM R7	AUDITORIUM R8
14:00-14:45		Keynote: Akio Tomiyama, Kobe University, Japan INTERFACE TRACKING AND MULTI-FLUID SIMULATION OF BUBBLY FLOWS IN BUBBLE COLUMNS	
14:45-15:00		Awards / Closing	
15:00-15:30	Afternoon Coffee		

Conference overview:

Monday June 20:

1800-1900: Reception at RICA Nidelven hotel

Tuesday June 21:

0800-0830: Registration

0830-0900: Opening

0855-1715: Keynotes & Technical Presentations

Wednesday June 22:

0830-1640: Keynotes & Technical Presentations

1900-2300: Conference dinner at RICA Nidelven Hotel

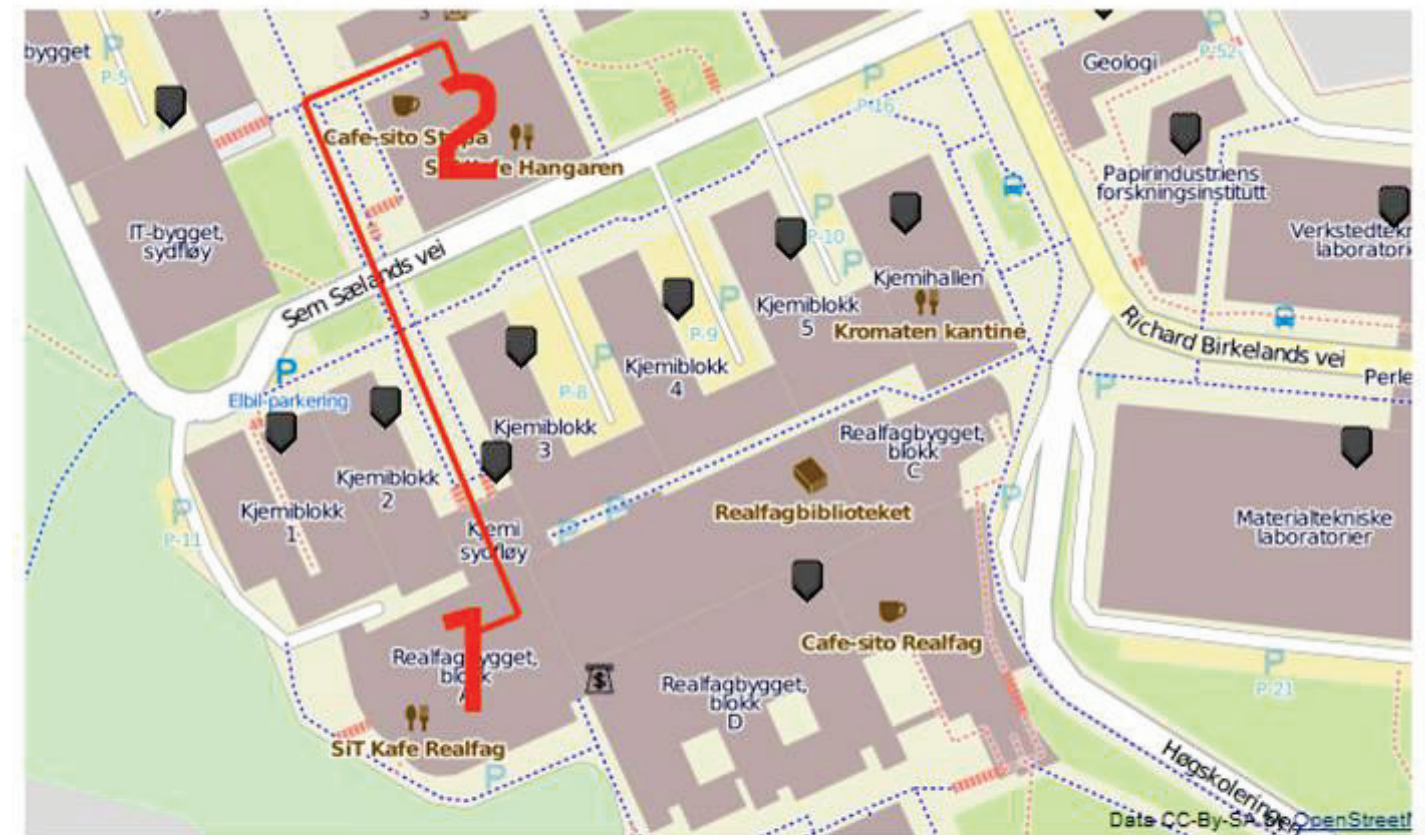
Thursday June 23:

0830-1445: Keynotes & Technical Presentations

1445-1530: Awards / Closing

Notes:

1. Lunch is served in the Hangeren canteen in an adjacent building. See the map →
2. Conference dinner is served at Rica Nidelven Hotel. Address: Havnegata 1-3.



1 Conference area (sub-floor)

2 Lunch area



The conference venue is south of city centre at the University Campus of NTNU known as Gløshaugen (pronounced Glos-haugen). It is within walking distance (25-30 minutes from the city centre).

To get from the city centre to the conference venue, you may take a bus (bus no. 5 "Dragvoll" or 52 "Othilienborg"). If so, get off at bus stop "Gløshaugen Syd". If going by taxi, the official address is Høgskoleringen 5. However, you are better off by using the entrance at **Sem Sælands vei 10** (between Chemistry block 2 and 3. Look for auditoriums R5-R9).