

# 17<sup>th</sup> International Conference on Multiphase Technology


Cannes 10 – 12th June 2015

Multiphase 2015  
“The Cannes Conference”

## Final Programme

### Tuesday 9<sup>th</sup> June 2015

17:00 – 18:00 Early registration in the Bar; Blue Lagoon Exhibition Room 

 Where you see the laptop sign we will be loading presentations for the next day

### Wednesday 10<sup>th</sup> June 2015

08:00 – 08:45 Morning Registration		Page no. In proceedings 
09:00	Chairman Welcome – Alex Hunt, Woodview Technology Ltd.	
09:10	Opening Keynote Address - World View of Multiphase Flow <i>Gert van Spronsen, Shell Projects and Technology, The Netherlands</i>	3
09:50 – 11:05	<b>SESSION 1: MODEL DEVELOPMENT</b> Chairman: Prof. Paolo Andreussi, University of Pisa, Italy	
09:50 – 10:15	Modelling of liquid droplets concentration profiles in stratified-annular flows <i>A Shmueli, Norwegian University of Science and Technology NTNU, Norway: M Borregales, M Asuaje, Simón Bolívar University, USB, Venezuela: O J Nydal, Norwegian University of Science and Technology NTNU, Norway</i>	25
10:15 – 10:40	Validation of a physically-based model for slug initiation and evolution in hydrodynamic slug flow <i>C Lawrence, Z G Xu, P Andersson, H Eiding, L Hovden, J Henriksson, S Henriksen, S Dayarathna, T Haugset, T Ruden; Schlumberger, SPT Technology Centre: B Hu, Flow Capture, Kunskapsbyenshus; Norway</i>	9
10:40 – 11:05	Comparison of multiphase flow models against experimental and field data of viscous oils <i>K Holmås, A De Leebeeck, R Aryal, T K Awolola, FMC Technologies, Norway</i>	NA
11:05 – 11:40 Refreshments Sponsored by 		
11:40 – 12:55	<b>SESSION 2: INCLINATION EFFECTS</b> Chairman: Peter Molyneux, DNV GL, UK	
11:40 – 12:05	Experimental study on the onset of intermittent flow and pseudo-slug characteristics in upward inclined pipes <i>Y Fan, E Pereyra, The University of Tulsa; USA: C F Torres-Monzón, University of Los Andes, Venezuela: T B Aydin, C Sarica, The University of Tulsa; USA</i>	43
12:05 – 12:30	Air-silicon oil flow around a vertical to horizontal 90° bend <i>R Omar, B Azzopardi, B Hewakandamby, University of Nottingham, UK</i>	59
12:30 – 12:55	Inclination effect on stratified oil-water pipe flow <i>M Khatibi, University of Stavanger: H Schümann, O J Nydal, Z Yang, Norwegian University of Science and Technology: R W Time, University of Stavanger: Norway</i>	75

12:55 – 13:00 Exhibitors presentation - Lubrozol

13:00 – 14:00

Lunch – Sponsored by



14:00 – SESSION 3: COMPUTATIONAL FLUIDS DYNAMICS

16:00 Chairman: Terry Wood, INTECSEA (UK) Ltd, UK

14:00 – 14:25	<b>Development of a new CFD-based unified closure relation for Taylor bubble velocity in two-phase slug flow in pipes</b> <i>E Lizarraga-Garcia, J Buongiorno, MIT, USA: E Al-Safran, Kuwait University, Kuwait: D Lakeha, ASCOMP, Switzerland</i>	93
14:25 – 14:50	<b>CFD for the multiphase flow splitting from a single flowline into a dual riser</b> <i>R A Worthen, Shell Projects &amp; Technology: R A W M Henkes, Shell Projects &amp; Technology, Delft University of Technology: The Netherlands</i>	109
14:50 – 15:15	<b>Improving boundary conditions for multiphase CFD predictions of slug flow induced forces</b> <i>P Emmerson, M Lewis, N Barton, Xodus Group Ltd, UK</i>	125
15:15 – 15:40	<b>CFD modelling of bypass pigs with a deflector disk</b> <i>J E Azpiroz, M H W Hendrix, W-P Breugem, Delft University of Technology: R A W M Henkes, Shell Projects &amp; Technology, Delft University of Technology, The Netherlands</i>	141

15:40 – 15:45 Exhibitors presentation - KBC

15:45 – 16:00 Exhibitors presentation – TMF Consortium

16:00 – 16:30

Refreshments Sponsored by



16:30 – SESSION 4: FLOW REGIME TRANSITIONS

18:20 Chairman: Dr. Jan Nossen, Institute for Energy Technology, Norway

16:30 – 16:55	<b>Effect of drag reducing polymer on pressure gradients of dispersed oil-water flow in horizontal and inclined pipes</b> <i>A Abubakar, T Al-Wahaibi, A R Al-Hashmi, Y Al-Wahaibi, A Al-Ajmi, M Eshrati, Sultan Qaboos University, Sultanate of Oman</i>	159
16:55 – 17:20	<b>An experimental study of oil-water flows in horizontal pipes</b> <i>R Ibarra, O K Matar, C N Markides, I Zadrazil, Imperial College London, UK</i>	169
17:20 – 17:45	<b>The Experimental Study of Liquid Holdup in Gas-Liquid Pipe Cyclonic Separator using Electrical Resistance Tomography and Wire Mesh Sensor</b> <i>S Kanshio, H Yeung, L Lao, Cranfield University, UK</i>	185
17:45 – 18:10	<b>Computational fluid dynamics (CFD) simulation of multiphase flow and validating using wire mesh sensor</b> <i>M Parsi, R E Vieira, the University of Tulsa: V Srinivasan, ANSYS Inc: B S McLauray, S A Shirazi, The University of Tulsa; USA: E Schleicher, U Hampel, Helmholtz-Zentrum Dresden-Rossendorf; Germany</i>	197

18:10 – 18:15 Exhibitors presentation - Ascomp

18:15 – 18:20 Exhibitors presentation - Schlumberger

18:20 – 19:20 Networking Welcome Reception – Sponsored by




## Thursday 11<sup>th</sup> June 2015

09:00 – SESSION 5: EXPERIMENTAL (SLUGS AND WAVES)

11:00 Chairman: Colin Hale, Imperial College, UK

09:00 – 09:40	<b>Opening Keynote Address - Severe slugging revisited</b> <i>Professor Ole Jorgen Nydal, Norwegian University of Science and Technology, Norway</i>	5
09:40 – 10:05	<b>Small scale experiments on surge waves in low liquid loaded pipes</b> <i>S I Grødahl, Norwegian University of Science and Technology: Z Yang, Norwegian University of Science and Technology, Statoil ASA: O J Nydal, Norwegian University of Science and Technology: Norwegian University of Science and Technology; Norway</i>	213

10:05 –	<b>Wind-wave interaction in stratified gas/liquid pipe flow</b>	225
10:30	<i>A A Ayati, A Jensen, University of Oslo, Norway</i>	
10:30 –	<b>Measurement of mean velocity profiles in the slug and liquid film of gas-liquid slug flow</b>	233
10:55	<i>R J Belt, TOTAL E&amp;P, France; P R Leinan, SINTEF Petroleum Research, Norway</i>	
<b>10:55 – 11:00 Exhibitors presentation - BHR</b>		
<b>11:00 – 11:35 Refreshments with the exhibitors</b>		
11:35 –	<b>SESSION 6: HIGH VISCOSITY FLUIDS</b>	
13:20	<b>Chairman: Dr. Cem Sarica TUFFP, The University of Tulsa, USA</b>	
11:35 –	<b>Experimental studies on void fraction in slug of three-phase viscous oil flows in a near horizontal pipe</b>	255
12:00	<i>Z Yang, Statoil ASA; B Hu, Flow Capture AS; M Langsholt, L Liu, Institute for Energy Technology; T Kindsbekken Kjeldby; Norway</i>	
12:00 –	<b>Flow Pattern Transition Model for Gas-Highly Viscous Fluids in Horizontal Pipelines</b>	269
12:25	<i>A Brito, R Cabello, J Marquez, PDVSA Intevep, Venezuela; J Trujillo, GALP Energy, Portugal; N Guzmán, Lone Star College, USA</i>	
12:25-	<b>Viscous liquid-gas flow in horizontal pipelines: experiments and multiphase flow simulator assessment</b>	283
12:50	<i>A Archibong-Eso, Cranfield University; W Yan, KW Subsea Ltd; Y Baba, S Kanshio, H Yeung, Cranfield University; UK</i>	
12:50 –	<b>New Insights - Impact of Thermal Cycling on the Restart of Waxy Crude Oil Pipelines</b>	297
13:15	<i>V Khosla, M van Dijk, A Wesenhagen, X Petit, Shell Global Solutions International BV, The Netherlands</i>	
<b>13:15 – 13:20 Exhibitors presentation – ITT Bornemann</b>		
<b>13:20 – 14:20 Lunch – Sponsored by</b>		
		
		
14:20 –	<b>SESSION 7: SPECIAL REGIONAL FOCUS - Tanzania</b>	
16:15	<b>Chairman: Steve Smith, Schlumberger, USA</b>	
14:20 –	<b>Tanzania gas development – flow assurance challenges</b>	313
14:40	<i>H Holm, Statoil ASA, Norway</i>	
14:40 –	<b>Experiments for low liquid loading with liquid holdup discontinuities in two- and three-phase flows</b>	327
15:00	<i>J Kjølås, T Erling Unander, M Wolden, SINTEF Petroleum AS; P S Johansson, H Holm, Statoil; Norway</i>	
15:00 –	<b>Analysis of hydraulic gradients in large scale experiments</b>	343
15:20	<i>J Nossen, T Sira, Institute for Energy Technology; T Vanvik, Schlumberger; H T Holm, Statoil; Norway</i>	
15:20 –	<b>Validation of OLGA HD against transient and pseudo-transient experiments from the SINTEF large diameter high pressure flow-loop</b>	357
15:40	<i>G Staff, D Biberg, T Vanvik, N Hoyer, Schlumberger, SPT TC; J Nossen, Institute for Energy Technology, H Holm, P S Johansson, Statoil; Norway</i>	
15:40 –	<b>Accounting for flow model uncertainties in gas-condensate field design using the OLGA High Definition Stratified Flow Model</b>	375
16:00	<i>D Biberg, G Staff, N Hoyer, Schlumberger SPT TC; H Holm, Statoil; Norway</i>	
16:00 –	<b>Questions and answers with the panel</b>	
16:10		
<b>16:10 – 16:15 Exhibitors presentation – FMC Technologies</b>		
<b>16:15 – 16:45 Refreshments with the exhibitors</b>		
16:45 –	<b>SESSION 8: MANAGEMENT OF SOLIDS</b>	
18:05	<b>Chairman: John Dobson, Oil Plus, UK</b>	
16:45 –	<b>Quantitative Risk Assessment of Downhole Continuous Chemical Injection for Subsea Multiphase Production System</b>	391
17:10	<i>D Peng, A Low, INTECSEA Ltd; UK</i>	
17:10 –	<b>Experiments and Modelling of Sand Erosion in Gas- Liquid Cylindrical Cyclone Separators under Gas Production and Low-Liquid Loading</b>	415
17:35		

	<i>R E Vieira, S Sajeev, S A Shirazi, B S McLaury, The University of Tulsa: G Kouba, Chevron Energy Technology Company; USA</i>	
<b>17:35 – 18:00</b>	<b>Discussion of Pipeline Leakage and Hydrate Formation Risks Associated in Deepwater Natural Gas Pipelines</b> <i>S Zhai, C Chauvet, R Azarinezhad, J Zeng and A Priyadarshi, Wood Group Kenny; UK</i>	<b>431</b>
<b>18:00 – 18:05 Exhibitors presentation - Kongsberg</b>		
<b>19:00</b>	<b>Drinks reception sponsored by FMC Technologies</b>  <b>FMC Technologies</b>  <b>Gala dinner sponsored by Kongsberg</b> <b>DINNER DRESS CODE: BUSINESS/CASUAL</b>	 <b>KONGSBERG</b>

## Friday 12<sup>th</sup> June 2015

<b>09:00 – 10:15</b>	<b>SESSION 9: MODELLING APPLICATIONS</b> <b>Chairman: Martin Watson, Feesa Limited, UK</b>	
<b>09:00 – 09:25</b>	<b>Operating envelope generation to extract maximum value from steady state modelling of multiphase pipelines</b> <i>J Hinsley, Integrated Process Analysis Ltd on behalf of INTECSEA (UK) Ltd; L Liebana, INTECSEA (UK) Ltd; UK</i>	<b>455</b>
<b>09:25 – 09:50</b>	<b>Exploring the Potential of Model-Based Optimization in Oil Production Gathering Networks with ESP-Produced, High Water Cut Wells</b> <i>M Stanko, NTNU: M Golan, MEGO A/S; Norway</i>	<b>471</b>
<b>09:50 – 10:15</b>	<b>Subsea Multiphase Boosting Station System &amp; Controls Optimization</b> <i>G Becquin, R Castane Selga, S Abrol, A Busboom, GE Global Research: D Doder, A Jain, T Glomsaker, GE Oil &amp; Gas: M Hyllseth, C Ruigrok, Kongsberg Oil &amp; Gas Technologies; Germany</i>	<b>487</b>
<b>10:15 – 10:50 Refreshments with the exhibitors</b>		
<b>10:50 – 12:05</b>	<b>SESSION 10: FIELD CASE STUDIES</b> <b>Chairman: Peter Wilson, BG Group, UK</b>	
<b>10:50 – 11:15</b>	<b>Wax deposition in North Sea Reservoir Wells: Field Observations and Simulations</b> <i>P Bartolome, Mærsk Olie og Gas A/S: P Tybjerg, Calsep A/S: A Pottayil, Calsep Asia Pacific Sdn Bhd; Denmark</i>	<b>505</b>
<b>11:15 – 11:40</b>	<b>Performance evaluation of an online transient simulator used in deepwater operations</b> <i>J M Canon, S Yau, M Fernandes, BP Angola; The Netherlands: K E Lundsbakken, C Trudvang, M Espeland, Schlumberger Information Solutions; Norway</i>	<b>519</b>
<b>11:40 – 12:05</b>	<b>Comparisons between engineering software predictions and West of Africa deepwater field data including thermal performances</b> <i>C Candelier, F Papot, Multiphase Flow specialists, TOTAL E&amp;P</i>	<b>535</b>
<b>12:05 – 12:20</b>	<b>Best Paper Award Presentation – Sponsored by</b> <b>Close of Conference</b>	 <b>WOODVIEW TECHNOLOGY</b> Making the New Commonplace
<b>12:20</b>	<b>Conference close with lunch – Sponsored by</b>	



# Thursday 11<sup>th</sup> June Gala dinner map



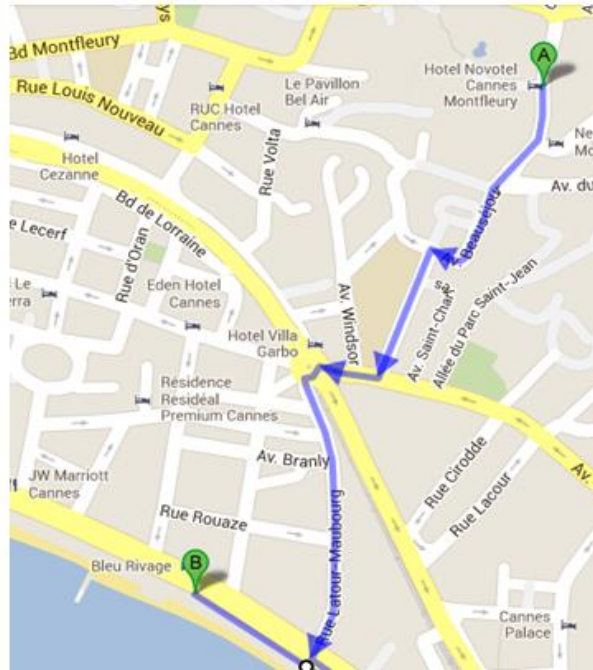
Hotel Novotel Cannes Montfleury

Head **south** on **Av. Beauséjour** toward **Traverse**

1. **Beauséjour**  
Go over 1 roundabout
2. Turn left to stay on **Av. Beauséjour**
3. Turn right onto **Av. du Maréchal Juin**
4. At the roundabout, take the **2nd** exit onto **Rue Latour-Maubourg**
5. Turn right onto **Bd de la Croisette** Destination will be on the left



La Mandala Restaurant, Boulevard de la Croisette, 06400 Cannes



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