



PROGRAMME – ORAL PRESENTATIONS

DAY 1 – SUNDAY – 25 MARCH 2018		
14:30 – 17:00		Registration
Session 1		Chair: N Fischer (Conference Chair, University of Town, South Africa)
17:00		Opening address: M Claeys (Director of c*change, University of Cape Town, South Africa)
17:15	P01	<u>G Centi</u> , S Perathoner, A Salladini, G Iaquaniello (University of Messina, Italy) <i>Chemistry and energy beyond fossil fuels: the role of syngas from waste sources</i>
18:00 – 20:00		Poster session and welcome function

DAY 2 – MONDAY – 26 MARCH 2018		
07:15 – 08:30		Registration
Session 2		8:30 – 10:20 Chair: Y-W Li (Synfuels China, China)
8:30	K01	<u>P Gibson</u> , T Botha, A Ferreira, D Moodley (Sasol, South Africa) <i>Fischer-Tropsch catalysis: the king is dead, long live the king</i>
9:00	O01	<u>P Pfeifer</u> , C Sun, J Schwab, M Loewert, R Dittmeyer, P Piermartini, T Böltken (KIT, Germany) <i>Process intensification in production of synthetic fuels from renewable energy</i>
9:20	O02	<u>L Fratalocchi</u> , CG Visconti, L Lietti, G Groppi, E Tronconi (Politecnico di Milano, Italy) <i>Intensifying heat transfer in Fischer-Tropsch tubular reactors through the adoption of packed metal foams</i>
9:40	O03	<u>K Karim</u> , J Barochia, Z Nawaz (SABIC, Saudi Arabia) <i>Direct conversion of syngas to hydrocarbons technology</i>
10:00	O04	<u>DSW Ong</u> , YH Du, H Kamata, N Mizukami, L Chen, A Borgna (Institute of Chemical and Engineering Sciences, Singapore / IHI Corporation, Japan) <i>Activation studies of Fe₂O₃ catalysts for Fischer-Tropsch Synthesis</i>
10:20 – 10:50		Tea/Coffee
Session 3		10:50 – 13:00 Chair: LT Thompson (University of Michigan, USA)
10:50	K02	<u>X Pan</u> , X Bao (Dalian Institute of Chemical Physics, China) <i>Selectivity control in syngas conversion to light olefins</i>
11:20	O05	<u>Z Nawaz</u> , K Karim (SABIC, Saudi Arabia) <i>Reactor modelling of multi-tubular fixed bed reactors using ACM for syngas to hydrocarbons production</i>



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11:40	O06	<u>A Prakash</u> , A Chatla, S Afzal, P Littlewood, P Stair, N Catherin, N Elbashir (Texas A&M / Total, Qatar) <i>Improving the coking resistance of reforming catalysts via Atomic Layer Deposition</i>
12:00	O07	<u>PM Mortensen</u> , JS Engbæk, SB Vendelbo, MF Hansen, M Østberg, WL Eriksen, K Aasberg-Petersen (Haldor-Topsoe / DTI, Denmark) <i>Direct induction heating of steam reforming catalysts</i>
12:20	O08	C Schwarz, L Vogt, A Agapova, H Junge, <u>M Haumann</u> (FAU Erlangen-Nürnberg, Germany) <i>Ultra-low temperature methanol reforming using immobilized Ru-Pincer complexes</i>
12:40 – 13:00	Group photograph (Vineyard Hotel Garden)	
13:00 – 14:00	Lunch	
Session 4	14:00 – 16:05 Chair: M Bowker (Cardiff University / UK Catalysis Hub / Catasys Ltd, UK)	
14:00	P02	<u>LT Thompson</u> (University of Michigan, USA) <i>Coupled CO₂ capture and hydrogenation using cascade catalysis concepts</i>
14:45	O09	<u>L Falbo</u> , CG Visconti, L Lietti, J Szanyi (Politecnico di Milano, Italy / Pacific Northwest National Laboratory, USA) <i>CO₂ methanation on a Ru/Al₂O₃ catalyst in the presence of CO: in-situ spectroscopy and reactivity analysis</i>
15:05	O10	<u>C Vogt</u> , E Groeneveld, G Kamsma, M Nachtegaal, L Lu, CJ Kiely, PH Berben, F Meirer, BM Weckhuysen (Utrecht University / BASF, The Netherlands / Paul Scherrer Institute, Switzerland / Lehigh University, USA) <i>Unravelling structure sensitivity in CO₂ hydrogenation over Ni</i>
15:25	O11	<u>J Ilsemann</u> , M Bäumer (University of Bremen, Germany) <i>Stability considerations of novel, highly active Ni-Sm₂O₃ catalysts in the CO₂ methanation – Influence of reaction conditions and preparation methods</i>
15:45	O12	<u>PC Kok</u> , DSW Ong, CKS Choong, L Chen, N Mizukami, H Kamata, A Borgna (Institute of Chemical and Engineering Sciences, Singapore / IHI Corporation, Japan) <i>Nano-MoS₂ for direct methanation with H₂S - Effect of catalyst support and Mo precursor</i>
16:05 – 16:30	Tea/Coffee	



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Session 5		16:30 – 18:00 Chair: Y Wang (Xiamen University, China)
16:30	K03	<u>G Prieto</u> (Max Planck Institute, Germany) <i>Towards improved yields in the tandem Fischer-Tropsch/hydrotreating process for the wax-free production of liquid hydrocarbons from syngas</i>
17:00	O13	<u>MW Dlamini</u> , RP Forbes, NJ Coville (University of the Witwatersrand, South Africa) <i>Bifunctional yolk-shell α-Fe₂O₃@m-SiO₂-Al₂O₃ catalysts for tuning the Fischer-Tropsch product distribution</i>
17:20	O14	<u>JL Weber</u> , JP Hofmann, PE de Jongh, KP de Jong (Utrecht University, The Netherlands) <i>Catalyst deactivation and promoter migration during the conversion of syngas to chemicals using bifunctional catalysis</i>
17:40	O15	<u>J-P Héraud</u> , M Matrat, L Starck, A Bouter (IFP Energies Nouvelles, France) <i>Impact of Fischer-Tropsch biodiesel on atmospheric emissions</i>

DAY 3 – TUESDAY – 27 MARCH 2018

Session 6		8:30 – 10:15 Chair: E van Steen (University of Cape Town, South Africa)
8:30	P03	<u>Y-W Li</u> , Y Yang, X Wen (Synfuels China, China) <i>Fischer-Tropsch Synthesis: Fundamentals and engineering practices</i>
9:15	O16	<u>M Loewert</u> , H Lichtenberg, P Pfeifer (KIT, Germany) <i>Dynamic operation of microstructured Fischer-Tropsch reactors</i>
9:35	O17	<u>S Kocić</u> , J-M Schweitzer, P Raybaud, MC Valero (IFP Energies Nouvelles, France) <i>Modelling the influence of carbon and oxygen on the activity and selectivity of Co-based FT catalyst: a DFT-guided microkinetic study</i>
9:55	O18	<u>RJP Broos</u> , B Zijlstra, IAW Filot, EJM Hensen (Eindhoven University of Technology, The Netherlands) <i>Elucidation of the chain-growth and oxygen removal mechanism in the Fischer-Tropsch reaction over iron carbide surfaces</i>
10:15 – 10:45		Tea/Coffee
Session 7		10:45 – 12:35 Chair: P Gibson (Sasol, South Africa)
10:45	K04	<u>M Claeys</u> , N Fischer, M Wolf (University of Cape Town, South Africa) <i>Capturing water-induced deactivation mechanisms of cobalt based Fischer-Tropsch catalysts in situ</i>



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11:15	O19	<u>S Humbert</u> , S Maury, A Berliet (IFP Energies Nouvelles, France) <i>A novel approach coupling ASAXS analysis and data modelling to predict selectivity from the particle size distribution</i>
11:35	O20	<u>M Wolf</u> , EK Gibson, JE Olivier, CRA Catlow, JH Neethling, N Fischer, M Claeys (University of Cape Town / Nelson Mandela University, South Africa / UK Catalysis Hub, UK) <i>Water induced formation of cobalt-support compounds under simulated high conversion Fischer-Tropsch environment</i>
11:55	O21	<u>R Xu</u> , C Niu, Z Hu, H Nie (Sinopec, China) <i>The study of deactivation and regeneration of Co/Al₂O₃ Fischer-Tropsch synthesis catalyst</i>
12:15	O22	L Fratolocchi, <u>CG Visconti</u> , L Lietti, N Fischer, M Claeys (Politecnico di Milano, Italy / University of Cape Town, South Africa) <i>Advances in the development of highly active Pt-promoted Co-based Fischer-Tropsch catalysts</i>
12:35 – 13:30		Lunch
Session 8		13:30 – 15:10 Chair: EJM Hensen (Eindhoven University of Technology, The Netherlands)
13:30	O23	<u>C Tucker</u> , E van Steen (University of Cape Town, South Africa) <i>An investigation of deactivation and selectivity for cobalt-based Fischer-Tropsch synthesis at high conversion</i>
13:50	O24	<u>A Maury</u> , A-S Gay, K Dembélé, M Bahri, L Lemaitre, M Rivallan, O Ersen (IFP Energies Nouvelles / Institut de Physique et Chimie des Matériaux de Strasbourg, France) <i>Microstructural evolution of Co catalysts during activation and Fischer-Tropsch reaction investigated by operando Transmission Electron Microscopy</i>
14:10	O25	GM Bremmer, E Zacharaki, AO Sjøstad, VN Parades, JWM Frenken, <u>PJ Kooyman</u> (Leiden University, The Netherlands / University of Oslo, Norway / Advanced Research Center for Nanolithography, The Netherlands / University of Cape Town, South Africa) <i>In situ TEM observation of multi-layered carbon formation from CO on cobalt nanoparticles at atmospheric pressure</i>
14:30	O26	<u>CJ Weststrate</u> , D Sharma, DG Rodriguez, JW Niemantsverdriet (Syngaschem BV / DIFFER, The Netherlands / SynCat@Beijing, China) <i>Hydrogen and CO adsorption and dissociation on flat and stepped cobalt surfaces</i>



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14:50	O27	<u>P van Helden</u> , F Prinsloo, J-A van den Berg, B Xaba, M Claeys, J van de Loosdrecht (Sasol / University of Cape Town, South Africa) <i>Cobalt-nickel bimetallic Fischer-Tropsch catalysts: a combined theoretical and experimental approach</i>
15:10 – 15:40		Tea/Coffee
Session 9		15:40 – 17:30 Chair: P van Helden (Sasol, South Africa)
15:40	K05	<u>EJM Hensen</u> (Eindhoven University of Technology, The Netherlands) <i>Mechanism of the cobalt-catalysed Fischer-Tropsch reaction</i>
16:10	O28	S Govender, T Gambu, <u>T van Heerden</u> , E van Steen (University of Cape Town, South Africa) <i>Mechanistic pathways for oxygen removal over platinum-doped cobalt surfaces in the Fischer-Tropsch reaction</i>
16:30	O29	<u>AC Kizilkaya</u> , JW Niemantsverdriet, CJ Weststrate (Izmir Institute of Technology, Turkey / Eindhoven University of Technology, The Netherlands / Syngaschem BV, The Netherlands) <i>A molecular perspective on the poisoning of cobalt Fischer-Tropsch Synthesis catalysts by ammonia</i>
16:50	O30	<u>I Filot</u> , M van Etten, B Zijlstra, R Broos, E Hensen (Eindhoven University of Technology, The Netherlands) <i>Multiscale modelling in Fischer-Tropsch synthesis: Optimizing the formation of longer hydrocarbons</i>
17:45		Buses depart Vineyard Hotel for dinner
19:00		Informal dinner at Jonkershuis Restaurant, Groot Constantia

DAY 4 – WEDNESDAY – 28 MARCH 2018

Session 10		8:30 – 10:35 Chair: G Centi (University of Messina, Italy)
8:30	P04	<u>M Bowker</u> , R Armstrong, H Bahruji, C Brookes, J Hayward, G Hutchings, JR Esquiú (Cardiff University / UK Catalysis Hub / Catasys LTd, UK) <i>Methanol synthesis from syngas derived from fossil fuels or renewables</i>
9:15	O31	<u>BS Xaba</u> , AS Mahomed, HB Friedrich, S Singh (University of Kwazulu-Natal, South Africa) <i>The influence of modifiers (Ga and Zr) on the performance of CuZn catalysts for carbon dioxide hydrogenation to methanol</i>
9:35	O32	KH Delgado, D Wild, S Pitter, J Sauer, L Maier, <u>O Deutschmann</u> (KIT, Germany) <i>Kinetic study of methanol and direct dimethyl ether synthesis</i>



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9:55	O33	<u>F Frusteri</u> , C Cannilla, F Costa, A Mezzapica, G Bonura (CNR-ITAE Messina, Italy) <i>Inside the concept of multifunctionality of hybrid systems to discover how achieve high yield to DME from CO₂ hydrogenation</i>
10:15	O34	<u>G Baracchini</u> , M Klumpp, A Machoke, W Schweiger, R Dittmeyer (KIT, Germany) <i>Direct DME synthesis over bifunctional catalysts: preparation and characterization of a core@shell system</i>
10:35 – 11:00	Tea/Coffee	
Session 11	11:00 – 12:50 Chair: G Prieto (Max Planck Institute, Germany)	
11:00	K06	K Cheng, J Kang, Q Zhang, <u>Y Wang</u> (Xiamen University, China) <i>Design of bifunctional catalysts for direct conversion of syngas to lower olefins and aromatics with high selectivity</i>
11:30	O35	<u>J Barochia</u> , Z Nawaz, K Karim (SABIC, Saudi Arabia) <i>Highly active cobalt catalyst for syngas to light hydrocarbon conversion</i>
11:50	O36	M Khasu, T Nyathi, DJ Morgan, GJ Hutchings, M Claeys, <u>N Fischer</u> (Cardiff University, UK / University of Cape Town, South Africa) <i>Co₃O₄ morphology in the CO-PrOx reaction</i>
12:10	O37	<u>P Hellier</u> , M Bowker (Cardiff University / UK Catalysis Hub, UK) <i>Novel VOx shell/Fe₂O₃-core selective oxidation catalysts</i>
12:30	O38	<u>TM Nyathi</u> , N Fischer, APE York, M Claeys (University of Cape Town, South Africa / Johnson Matthey, UK) <i>Support effects on the Co₃O₄-catalysed CO-TOx and CO-PrOx: An in situ PXRD and magnetometry study</i>
12:50	Closing function	
13:00 – 13:45	Lunch	
14:00	Buses depart Vineyard Hotel for optional laboratory tour at University of Cape Town	