Normal sessions - Auditorium A

IUT sessions on electrolyte thermodynamics - Auditorium B

SAFT Symposium sessions - Auditorium C

Central European Summer Time

Monday 5 July

9:00	Welcome period		
10:30	Welcome address		
	COQUELET Christophe - Mines ParisTech		
11:00	**Keynote Speaker - François Nicol, Veolia Research** (available in replay) Process industry of the future: SFGP vision		
11:45	Ice breaker		
12:15	Break		
Ch	SADOWSKI Gabriele - TU Dortmund University		
13:45	**Keynote Speaker - Antoon ten Kate, Nouryon** (available in replay) Electrolytes in industry: worth their salt		
	Session 1A	**Session 1B - IUT**	**Session 1C**
	WILHELMSEN Oivind - Norwegian University of Science and Technology	BERNARD Olivier - CNRS	JAUBERT Jean-Noel - LRGP CNRS
	MS applied	**Electrolytes - Applications**	**Models**
14:35	**15 - A. Rahbari**, Delft Univ. of Technology Solubility of water in hydrogen at high pressures: A molecular simulation study	**133 - M. Williams-Wynn**, Univ. of KwaZulu-Natal, South Africa The distribution coefficients of Nd3+ between HNO3 and HDEHP	**18 - S. Hirohama**, Aveva, United-Kingdom Test of Inclusive gE Formula for Holderbaum-Gmehling Mixing Rule (PSRK) to Use NRTL together with Quadratic Mixing Rule with Temperature Dependent kji
14:55	**97 - E. Bourasseau**, CEA, France Thermodynamic properties study of MOX nuclear fuel using molecular simulation methods	**286 - D. Abranches**, Univ. of Aveiro, Portugal The Impact of the Counterion in the Performance of Ionic Hydrotropes	**23 - R. Privat**, Univ. of Lorraine, France New insight on EoS/gE mixing rules for cubic equations of state: proposition of a unified approach
15:15	**115 - P. Petris,** Siemens Industry Software B.V., The Netherlands From COSMO to advanced molecular simulations	**333 - C. Pulido Lamas**, Univ. Complutense of Madrid, Spain Freezing point depression for salty water using a scaled charge model	**219 - E. Moine**, Prosim, France Application of a comprehensive methodology for benchmarking a thermodynamic model
15:35	Break - The exhibitors welcome you on their booth		
	Session 2A	**Session 2B - IUT**	**Session 2C**
	BOURASSEAU Emeric - CEA	SIMONIN Jean-Pierre - Sorbonne Université CNRS	MEJIA Andres - Universidad de Concepcion
	Mesophases	**Electrolytes - Theory**	**Models**
15:55	**154 - A. Galindo**, Imperial College, United-Kingdom Self-assembly of the mesophases of aqueous monoglycerides using coarse-grained SAFT force fields	**139 - L. André**, BRGM, France Thermodynamics of saline aqueous solutions	**239 - D. Qvistgaard**, Technical Univ. of Denmark New Association Schemes for Tri-Ethylene Glycol (TEG)
16:15	**50 - G. Perez-Sanchez**, Ciceco, Portugal Unravelling the Phase Behaviour of Imidazolium-based Ionic Liquid Aqueous Solutions through Coarse-Grain Molecular Dynamics Simulations	**350. A. Gonzales de Castilla**, Institute of Thermal Separation Processes, Germany : A modified closest approach parameter for the Pitzer-Debye-Hückel term to address underscreening in 1:1 electrolytes with low dielectric constants	**282 - J. N. Jaubert**, Univ. of Lorraine, France Search for the optimum values of the (u,w) parameters involved in cubic equation of state - discussion on the impact of a volume translation
16:35	**337 A. Victorov,** Saint Petersburg State Univ., Russia Specific interactions in the model of mixed nonionic micelles: predicting aggregation behavior and details of structure	**141 - X. Liang**, Technical Univ. of Denmark On the parameters used in the Debye-Hückel theory	**324 - C. S. Agger**, Calsep, Denmark Modified method of characteristics for generating EOR oil recovery curves
16:55	Break - The exhibitors welcome you on their booth		
17:05	**Student activity: Meet your hero** **The exhibitors welcome you on their booth**		

Tuesday 6 July

	announce		
9:00	Welcome period		
	GALINDO Amparo - Imperial College London		
9:30	**Keynote Speaker - Joachim Gross, Univ. Stuttgart** (available in replay) A new approach for constructing analytic equations of state Sponsored by Entropy		
	MACEDO Maria Eugénia - University of Porto - FEUP		
10:15	**3 min pitches for Helmut Knapp best poster awards - sponsored by CNRS**		
10:55	Break - The exhibitors welcome you on their booth		
	Session 3A	**Session 3B - IUT**	**Session 3C**
	LLOVELL Felix - Universitat Rovira i Virgili	HASLAM Andrew - Imperial College London	BLAS Felipe - Universidad de Huelva
	Interfaces	**Electrolyte - Industry**	**SAFT**
11:10	**64 - S. Stephan**, Lab. of Engineering Thermodynamics, Germany Enrichment of components at vapor-liquid interfaces: molecular modeling and prediction from macrosopic data	**91 - B. Maribo-Mogensen**, Hafnium Labs, Denmark To infinite dilution and beyond – perspectives on predictive electrolyte models	**71 - M. Kohns**, Imperial College, United-Kingdom Modelling aqueous solutions of strong and weak electrolytes using the SAFT-γ Mie equation of state

11:30	**122 - A. Mejia**, Univ. de Concepcion, Spain Experimental determination, theoretical modeling and molecular dynamics simulation of interfacial properties of CH4 + n-alkane binary mixtures	**260 - S. Kuitunen**, Neste Neste's view on needs for electrolyte thermodynamics	**32 - K. Langenbach**, Lab. of Engineering Thermodynamics, Germany Thermodynamic and dielectric properties from an equation of state
11:50	**132 - S. Tiwari**, Indian Institute of Technology, Kampur, India Insight into the mechanism of nanoparticle induced suppression of detergency: experiments, modelling and simulations	**372 - P. J. Walker,** Imperial College of London Importance of the relative static permittivity in electrolytic SAFT-VR Mie equations of state	**54 - L. F. Vega**, Khalifa Univ. of Abu-Dhabi, U.A.E Extension of soft-SAFT EoS to polar fluids: Comparison with molecular simulations and application to experimental systems
12:10	**POSTER SESSION 1** **The exhibitors welcome you on their booth**		
	Session 4A	**Session 4B**	**Session 4C**
	NIETO-DRAGHI Carlos - IFP Energies nouvelles	TEN KATE Antoon - Nouryon	GROSS Joachim - University of Stuttgart
	IFT / confinement	**IUT**	**SAFT**
14:10	**89 - R. Nagl,** Graz Univ. of technology, Austria Interfacial Properties in ternary and quaternary Systems		**120 - T. van Westen,** Univ. of Stuttgart, Germany Accurate first-order perturbation theory for fluids: uf-Theory
14:30	**51 - I. Polishuk**, Israel About interrelation between PVT and phase equilibria in the systems of Ionic Liquids		**128 - J. T. Cripwell**, Stellenbosch Univ. Dipolar SAFT-γ Mie: extension to secondary groups and isomers
14:50	**164 - A. Mio**, Univ. of Trieste, Italy Investigation of friction force trends at the nanoscale using computation approach	**Round table discussion on Industrial Use of Electrolyte Thermodynamics.** The debate will cover 3 questions: 1. What modeling approach do you use when confronted with an electrolyte problem? 2. How to parameterize a model in the absence of data 3. How to create collaboration on an industrially important issue	**14 - B. D. Marshal**, Exxon Mobil A doubly associated reference perturbation theory for water
15:10	Break The exhibitors welcome you on their booth		Break The exhibitors welcome you on their booth
	Session 5A		**Session 5C**
	MOULTOS Othon - TU Delft		MCCABE Clare - Vanderbilt University
	Confined fluids		**SAFT**
15:25	**295 - H. Adidharma**, Univ. of Wyoming, U.S.A. New isochoric method to measure the phase transitions of binary mixtures confined in nanopores		**112 - M. Kiesel**, Imperial College of London Structural Properties of Ionic Surfactants using a SAFT-γ Mie Force Field in Molecular Simulation
15:45	**70 - I. G. Economou,** Institut of Nanoscience & Nanotechnology, Greece Mesoscale Modelling of Fischer-Tropsch Product Mixtures Confined in Graphene Meso-Pores		**364 - P. Rehner**, Univ. of Stuttgart, Germany A model for non-ionic surfactants based on inhomogeneous PC-SAFT
16:05	**322 - P. Habibi**, Delft Univ. of technology, The Netherlands A DFT study of the hydrogen storage capabilities of 2D honeycomb borophene oxide		**309 - E. J. M. Filipe**, Univ. of Lisboa, Portugal Complete surface tension characterization of fluorinated alcohols and their mixtures with hydrogenated alcohols: experimental, soft-SAFT-DGT modeling and MD simulations
16:25	**Job forum** **The exhibitors welcome you on their booth**		

Wednesday 7 July

9:00	Welcome Period		
	DE HEMPTINNE Jean-Charles - IFP Energies nouvelles		
10:00 10:45	**EFCE Michael Michelsen award lecture 2020 - Gabriele Sadowski, TU Dortmund** (available in replay) Thermodynamics for Pharmaceutical Development Sponsored by Elsevier		
10:55	Break - The exhibitors welcome you on their booth		
	MOUGIN Pascal - IFP Energies nouvelles	DUSSAP Claude-Gilles - Institut Pascal	FILIPE Eduardo - Instituto Superior Técnico
	Session 6A	**Session 6B**	**Session 6C**
	Molecular design	**Electrolyte - Theory**	**SAFT**
11:10	**165 - M. Fermeglia,** Univ. of Trieste, Italy How molecular simulations can inform business decisions in different industrial sectors: the composelector example	**49 - O. Bernard**, CNRS, France Thermodynamic properties of polyelectrolytes and associating electrolytes in solution	**99 - M. Fischlschweiger,** Graz Univ. of technology, Austria Modeling of Diffusion in Highly-Crosslinked Epoxy Resins with Maxwell-Stefan Approach and PC-SAFT
11:30	**327 - T. Specht,** Lab. of Engineering Thermodynamics, Germany Quantitative fingerprinting and thermodynamic modeling of poorly specified mixtures with NMR spectroscopy and machine learning	**370 - S. Hassanjani Saravi,** Princeton Univ. U.S.A Activity coefficients and relative permittivity of aqueous electrolytes from molecular simulations	**114 - J. Eller**, Univ. of Stuttgart, Germany Adsorption in heterogeneous porous media using classical density functional theory based on the PC-SAFT equation of state
11:50	**271 - M. Popovic,** Techn. Univ. of Münich, Germany Thermodynamic characterization of viruses: enthalpy, entropy and Gibbs energy	**323 - J.P. Simonin**, CNRS, France About the "Born" term used in thermodynamic models for electrolytes	**170 - A.Reinhardt**, KIT, Germany Interfacial properties of water + long-chain molecules
12:10	**POSTER SESSION 2** **The exhibitors welcome you on their booth**		
	Session 7A	**Session 7B**	**Session 7C**
	BRENNECKE Joan - University of Texas at Austin	MARIBO-MOGENSEN Bjorn - Hafnium Labs	PARICAUD Patrice - ENSTA PARIS
	Molecular design	**Electrolyte EOS**	**SAFT**
14:10	**19 - J. Ilja Siepmann**, Univ. of Minnesota, U.S.A High-Throughput Simulations and Machine Learning for Adsorption in Nanoporous Materials: Applications to Storage and Separations	**352 - A. Bansal,** Aveva, USA Process modeling of electrolyte systems using equation-oriented framework in AVEVA™ Process Simulation	**113 - C. G. Alba,** Univ. of Ramon Llull, Spain Study of the Solubility of 4th Generation Refrigerant R513a with Compatible Lubricants and their Performance in Refrigeration Cycles using Polar Soft-SAFT
14:30	**301 - C. Mc Cabe**, Vanderbilt Univ. of Nashville, USA Utilizing the Molecular Simulation Design Framework (MoSDeF) to Screen Soft Matter Systems	**291 - S. Kournopoulos,** Imperial College of London SAFT-γ Mie models for aqueous organic electrolytes: simulation benchmarks and development of a model for carboxylate salts	**213 - F. Llovell,** Univ. of Ramon Llull, Spain Characterization of the Absorption of F-Gases in new Fluorinated Ionic Liquids and Deep Eutectic Solvents with Soft-SAFT
14:50	**234 - Silvana Mattedi e Silva** - U. Federal de Bahia, Salvador, Brazil Improvement of artemisinin solubility using ionic liquids as hydrotropes	**345 - L. Cassayre,** CNRS, France A thermodynamic model representing solid-liquid equilibria in the VOSO4-H2SO4-H2O system based on water activity and solubility measurements	**248 - F. J. Blas**, Univ. de Huelva, Spain Interfacial properties of coarse-grained models of greenhouse gases, refrigerants, and long alkanes from density functional theory and computer simulation
15:10	Break - The exhibitors welcome you on their booth		

	Session 8A	Session 8B	Session 8C
	FERMEGLIA Maurizio - University of Trieste	CASSAYRE Laurent - Laboratoire de Génie Chimique/Toulouse INP	CHAPMAN Walter - Rice University
	Molecular design	**Electrolytes - Molecular Simulation**	**SAFT**
15:30	**37 - F. Jirasek**, Univ. of California, Irvine, USA Prediction of Activity Coefficients with Machine Learning	**204 - C. Nieto-Draghi,** IFPEN, France Coarse-graining simulation of the thermodynamic and mechanical behaviour of semi-permeable membranes used in redox flow batteries	**40 - O. Wilmhelsen**, Norwegian Univ. of Science & Technology SAFT for quantum fluid mixtures and the hydrogen society: present state-of-the-art and fundamental challenges
15:50	**134 - A. Alhadid,** Technical Univ. of Münich, Germany Design of Deep Eutectic Solvents: Selecting Constituents Based on Molecular Structure	**232 - P. T. Cummings,** Vanderbilt Univ. of Nashville, USA Molecular Modeling of Supercapacitors	**339 - N. Novak,** NCSR, Greece Modeling of water-hydrocarbon phase equilibria with the SAFT-VR Mie equation of state
16:10	**355 - P. Krokidas**, Nat. Center for Scientific Research, Greece Physics-driven machine learning model for the design of highly selectivy zeolitic-imidazolate frameworks	**307 - W. R. Smith,** Univ. of Guelph, Canada Molecular Simulation of Reactive Electrolyte Solutions and Applications to CO2 Capture	**116 - T. Lafitte**, Siemens/PSE, U.K The use of SAFT-y Mie EoS in industrial process modelling applications
16:30	**Job forum** **The exhibitors welcome you on their booth**		

Thursday 8 July

	Session 9A	Session 9B	Session 9C
08:45	Welcome Period		
	EL AHMAR Elise - Mines ParisTech	FELE ZILNIK Ljudmila - National Institute of Chemistry	HELD Christoph - TU Dortmund University
	Experimental	**Innovative processes**	**SAFT**
9:40	**274 - D. Tuma**, Fed. Inst. for Materials Research & Testing, Germany Carbon dioxide solubility in the ionic liquid 1-Hexyl-3-methylimidazolium hexafluorophosphate	**194 - A. B. Pereiro,** Univ. Nova of Lisboa, Portugal Mitigation of the environmental impact of fluorinated gases using key enabling technologies	**93 - S. Dohrn,** TU Dortmund Univ. lab of thermodynamics, Germany Understanding solvent-induced phase separation during spray drying of pharmaceutical formulations using PC-SAFT
10:00	**30 - F. Zaidin**, Petronas, Malaysia The solubility of CO2 + H2S mixtures in water, NaCl and mixed salts aqueous solution at 373.15 K to 423.15 K and pressure up to 25 MPa. experimental and modelling	**388 - R. Dohrn,** Bayer A.G, Germany Good reporting practice - essential for all who measure or use experimental data	**208 - M. Wehbe**, Imperial College of London Prediction of phase diagrams and ph-solubility profiles of active pharmaceutical ingredients using the SAFT-y Mie group contribution approach
10:20	167. **V. Dumouilla**, Roquette, France : Raman spectroscopy to model and characterize physicochemical properties of aqueous solutions of carbohydrates and polyols	**181 - G. M. Kontogeorgis**, Tech. Univ. of Denmark Industrial Requirements for Thermodynamic and Transport Properties - 2020	**300 - P. A. Korchak**, St-Petersburg State Univ., Russia ePC-SAFT modeling of l-tryptophan partitioning in aqueous biphasic systems with amino acid alkylimidazolium ionic liquids
10:40	Break - The exhibitors welcome you on their booth		
	DOHRN Ralf - Bayer AG		
11:00 11:20	**A. Aasen EFCE Junior researcher Excellence award** (available in replay) Accurate cubic equation of state for quantum fluid mixtures Sponsored by Prosim		
11:30	**Announcement + Helmut Knapp best poster awards**		
11:40	**POSTER SESSION 3** **The exhibitors welcome you on their booth**		
	Session 10A	**Session 10B**	**Session 10C**
	SIEPMANN Joern Ilja - University of Minnesota	YAN Wei - Technical University of Denmark	VEGA Lourdes - Khalifa University
	Hydrates	**Non-equilibrium**	**SAFT**
13:40	**160 - Saeideh Babaee**, Univ. of KwaZulu-Natal, South Africa Gas Hydrate Concentration Measurements on Sucrose Solutions Using a New Pilot Test Rig	**118 - V. Gerbaud**, Univ. of Toulouse, France Extremal principles in non-equilibrium thermodynamics	**7 - C. Held**, TU Dortmund Univ. lab. of thermodynamics, Germany Predicting the solubility of electrolytes in water-poor media with ePC-SAFT
14:00	**359 - M.A. Marcelino Neto,** Federal Univ. of technology, Brazil Experimental study and thermodynamic modelling of carbon dioxide and methane hydrates in the presence of isopropanol	**197 - T. Zeiner,** Graz Univ. of technology, Austria Computational fluid dynamics of ternary extraction systems	**243 - W. G. Chapman,** Rice Univ. of Houston, USA Self-assembly and phase behavior of mixed patchy colloids with any bonding site geometry: theory and simulation
14:20		**80 - A. Dehlouz,** Univ. of Lorraine, France Can we efficiently predict fluid viscosity data by combining an equation of state with the entropy-scaling concept?	**157 - A. Siddiqi**, Univ. of Bath, UK Water effect in the reverse micellar formation of docusate in cyclohexane. A coarse-grained molecular dynamic approach
14:40	Break - The exhibitors welcome you on their booth		
	Session 11A	**Session 11B**	**Session 11C**
	FISCHLSCHWEIGER Michael - Clausthal University of Technology	DE ANGELIS Maria Grazia - U. of Edinburgh; INSTM; University of Bologna	VICTOROV Alexey - St. Petersburg State University
	Hydrates	**Diffusion**	**Models**
15:00	**121 - A. K. Sum,** Colorado School of Mines, USA The Applied Thermodynamics of Water as Gas Hydrates: from Molecules to Phase Equilibria	**349 - H. M. Polat,** Total, France Predicting the transport properties of acid-gases in aqueous MEA solutions using molecular simulations	**374 - T. Zhao**, Imperial College of London *Ab initio* development of generalized Lennard-Jones (Mie) force fields for predictions of thermodynamic properties in advanced molecular-based saft equations of state
15:20	**144 - A. Serikkali,** Mines St Etienne, France Phase equilibrium for sea/waste water treatment and carbon capture with clathrate hydrates	**357 - M. S. Santo**s, Univ. of Queensland, Australia Finite-size effects on the diffusion coefficients from molecular dynamics simulations in crystal-like structures	**143 - S. Müller**, Hamburg Univ. of technology, Germany Including additional first-principles information into the COSMO-RS-ES model: a study on the local polarizability
15:40	**63 - P. Ahlström**, Univ. of Boras, Sweden Predicting crystal structures and gas adsorption in organic clathrates	**108 - M. Minelli,** Univ. of Bologna, Italy A thermodynamic approach for gas sorption in high free volume at cryogenic temperatures	**88 - C. Mayer,** Graz Univ. of technology, Austria Excess Gibbs-energy models based on discrete modeling of dice-like molecules
16:00	Break		

16:30 **Social event - sponsored by Shell**

Friday 9 July

09:00 Welcome Period

KUITUNEN Susanna - Neste

10:00 **Keynote Speaker - Kamil Paduszinsky, Warsaw Univ. of Technology** (available in replay)
Discovering Paths from Chemical Structure to Properties of Ionic Liquids with Empirical Correlations and Thermodynamic Models

10:45 Break - The exhibitors welcome you on their booth

	Session 12A	Session 12B	Session 12C
	SECUIANU Catinca - University Politehnica of Bucharest	VLUGT Thijs - TU Delft	KIJEVCANIN Mirjana - Faculty of Technology and Metallurgy, University of Belgrade
	Solvent CO2	**BioReactors**	**Algo**
11:00	**6 - M. Bülow**, TU Dortmund Univ., Germany Solvent blends for an increased solubility of sour gases in amine solutions	**340 - F. A. Sanchez**, Univ. Nacional del Sur, Argentina Phase equilibrium engineering in biorefinery reactive systems: n-alkanol acetylation	**86 - F. de Azevedo Medeiros,** Tech. Univ. of Denmark RAND-based Geochemical Calculation Algorithms for CO2 Sequestration
11:20	**138 - F. de Meyer**, Total, France Prediction of CO2/H2S/CH4 solubility in pure water and MDEA, and in an aqueous MDEA solution, using molecular simulations	**265 - R. I. Canales**, Univ. Catolica de Chile Thermodynamic study of the separation of guaiacol from solvents used in the bio-oil catalytic upgrade to fuels	**98 - D. Paterson,** Linde Engineering, Germany Volume based formulation for multiphase envelope calculation
11:40	**320 - F. Tzirakis,** Center for research & technology- hellas, Greece Assessment of phase change solvents used in CO2 capture	**188 - E. A. Macedo**, Univ. of Porto, Portugal Ethyl lactate-based ATPS for recovery of flavonoids	**218 - V. Koulocheris**, Nat. Technical Univ. of Athens, Greece Chemical and phase equilibria of mercury in natural gas with the UMR-PRU model

12:00 **POSTER SESSION 4**
The exhibitors welcome you on their booth

KONTOGEORGIS Georgios - Technical University of Denmark

14:00 **Keynote Speaker - Joann Brennecke, Univ. of Texas** (available in replay)
Gas Solubilities in Ionic Liquids - Revisited
Sponsored by Chemical Engineering Journal

14:45

	Session 13A	Session 13B	Session 13C
	SOTO Ana - Chemical Engineering Department	PEREDA Selva - Planta Piloto de Ingenieria Quimica	PRIVAT Romain - CNRS LRGP
	Solvent CO2	**solvents & Processes**	**Energy & Safety**
14:45	**137 - D. Bahamon**, Khalifa Univ. of Abu Dhabi, UAE Molecular simulations of degraded products in aqueous amines for CO2 absorption	**169 - A. Roth,** Karlsruhe Inst. of technology, Germany Thermodynamic Properties of Water + Polar Polymer + Salt Mixtures	**279 - S. Lasala,** Univ. of Lorraine, France The exploitation of reactive working fluids in a closed thermodynamic cycle. A breakthrough high-energy conversion system
15:05	**258 - E. Hernandez**, Univ. Autonoma de Madrid, Spain Ionic liquid-based catalysts for effective CO2 valorization to carbonates	**192 - E. Boli,** Nat. Technical Univ. of Athens, Greece Extraction of bioactive compounds from olive leaves using alternative solvents: experiments and modelling	**373 - R. Claveau,** CEA, France Toward a physical description of energetic materials sensitivity
15:25	**53 - I. I.I. Alkhatib**, Khalifa Univ. of Abu Dhabi, UAE An integrated approach using soft-SAFT with process modelling for the efficient screening of hybrid solvents for CO2 capture	**81 - P. Stringari**, Mines ParisTech, France & **N.G. Ince**, AVEVA USA Toward an optimized design of the LNG production process: Measurement and modeling of the solubility limits of p-xylene in methane and methane + ethane mixtures at low temperature	**231 - P. Paricaud,** ENSTA ParisTech, France Using ab initio calculation to predict the thermochemical and safety properties of multicomponent systems
15:45	**240 - W. G. Chapman,** Rice Univ. of Houston, USA Understanding CO2 Enhanced Gas Recovery from Gas Competitive Adsorption in Shale Nanopores using Molecular Density Functional Theory	**183 - M. G. De Angelis**, Univ. of Bologna, Italy Measurement and modelling of sorption of CO2/CH4/C2H6 mixtures in a glassy polymeric membrane for gas separation	**342 - M. Maury,** CEA, France Comparison of approaches to determine lower flamability limits

16:05 Break - The exhibitors welcome you on their booth

16:25 **Beekast results**

16:30 Closing remarks