

MONDAY 20 MAY 2024 // DAY 1: CONFERENCE OPENING & PLENARIES

10:00	WELCOME COFFEE
ROOM	PLENARY SESSION
10:30	<p>WELCOME ADRESSES Michel ASSOULINE, 3AF CEO Civic Welcome by Bailie Roza SALIH on behalf of The Lord Provost of Glasgow</p>
10:45	<p>CONFERENCE INTRODUCTION Jamila MANSOURI & Jean-François GUERY, Conference co-chairs</p>
11:00	<p><u>Round Table #1 : AGENCIES ROUND TABLE</u> MID AND LONG TERM POLICIES IMPACTING FUTURE PROPULSION Moderator: Chiara MANFLETTI, TUM Paul BATE, UKSA - Jérôme BRETEAU, ESA - Claus LIPPERT, DLR - Hitoshi KUNINAKA, JAXA - Jean-Marc BAHU, CNES - Enrico CAVALLINI, ASI</p>
12:30	LUNCH
14:00	<p><u>Round Table #2.1 : INDUSTRIES ROUND TABLE</u> How to speed up innovative propulsion release to market ? Moderator: Jamila MANSOURI, ESA Francesco BETTI, AVIO - Martin SION, ArianeGroup - Lahib BALIKA, Thales Alenia Space- Rob SELBY, NAMMO SPACE - Mikhail ANDRIEVSKIY, SKYRORA</p>
15:00	<p><u>Round Table #2.2 : INDUSTRIES ROUND TABLE</u> How to speed up innovative propulsion release to market ? Moderator: Jamila MANSOURI, ESA Chiara PERTOSA, SITAEL - Dean McBRIDE, AIRBUS Defence and Space - Patrick VAN PUT, Bradford Space Europe - Emmanuel POULEAU, Safran Spacecraft Propulsion - Markus PEUKERT, OHB</p>
16:00	COFFEE BREAK
16:30	<p>KEYNOTE SPEECH #1: Flying Artemis 1 with the European Service Module's Propulsion System Tobias LANGENER (ESA) , Stephen BARSİ (NASA)</p>
17:00	<p><u>Round Table #3 : SPACE PROPULSION AMBITIONS FOR FUTURE CARGO & CREW SERVICE VEHICLES TO LEO AND BEYOND</u> Introduction : Samantha CRISTOFORRETTI, ESA Moderator : Tobias LANGENER ESA - Stephen BARSİ, NASA - Markus JAEGER, Airbus Defence and Space Hélène HUBY, The Exploration Company - Jamila MANSOURI, ESA</p>
18:00	END OF DAY 1
19:30	TRADITIONAL DINNER

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TUESDAY 21 MAY 2024 // DAY 2

08:30		KEYNOTE SPEECH #2 RELIANCE, the innovative main engine supporting interplanetary exploration - Elliott WORSLEY and Rob WESCOTT, NAMMO								
		ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7	ROOM 8	ROOM 9
		SESSION 01 Maturation Programs overview 1	SESSION 02 Solid Rocket Motors 1	SESSION 03 Thrust Chamber Design & Development	SESSION 04 Injection & Combustion in Biprop Systems	SESSION 05 Numerical Methods for Chemical Propulsion	SESSION 06 Green Propellant Systems: Program Overviews	SESSION 07 Resistojets	SESSION 08 Magneto Plasma Dynamic Thrusters	SESSION 09 Test Facilities
Chair		Stefano MATTEINI - ESA	Jérôme ANTHOINE - ONERA	Victor FERNANDEZ VILLACE - ESA	Markus PEUKERT - OHB	Csaba JEGER - ESA	Ulrich GOTZIG - ArianeGroup	David PERIGO - ESA	Roger MYERS - R Myers Consulting, LLC.	Juliusz SARYCEW - ESA
09:20	1	181 - NASA's Developments in Cryogenic Fluid Management Technology Lauren AMEEN - NASA Glenn Research Center - United States	260 - Use of a new ballistic catalyst and its consequences on Solid Rocket Motor and at System levels Fabrice MARTIN - ArianeGroup - France	286 - Design, Development and Testing of the Injector for a 3D-Printed Throttleable and Reusable LOX/Methane Rocket Engine Alexander BEE - German Aerospace Center (DLR) - Germany	112 - Preliminary Test of Kerosene Nitrous Oxide Catalytic Decomposition Bipropellant Thruster SeungHo LEE - Korea Advanced Institute of Science and Technology (KAIST) - South Korea	136 - Implementation of a molecular flow model and its transition from the continuous regime within ESPSS/EcosimPro David GUTIÉRREZ - EMPRESARIOS AGRUPADOS INTERNACIONAL - Spain	380 - Recent Progress on Green Hypergolic Bipropellant Research in JAXA Keigo HATAI - Japan Aerospace Exploration Agency - Japan	124 - Development of an Additively Manufactured Resistojet with Novel Heat Exchanger for CubeSats Daniel TURNER - Curtin University - Australia	385 - Downscaling the 100kW SX3 AF-MPD to the 5kW SUPREME Thruster Giulia BECATTI - University of Stuttgart - Germany	045 - Hot Plume Testing Facility Cologne (HPTF): Demonstration, Qualification and Exploration Tests with the Water-cooled PennState-like Burner HOC2 Dominik SAILE - DLR - Germany
09:40	2	406 - Next Stage to Space: a roadmap to future launcher technologies Antonio ACCETTURA - AZO - Space of Innovation - Germany	579 - Aluminum particles role in SRM thrust oscillations - Challenges for P120C SRM evolutions Severine LARRIEU - ArianeGroup - France	351 - Porous Injectors : the future of flexible LOx - Methane Rocket Engines ? A Research Roadmap Alexander POLIDAR - Technische Universität München - Germany	346 - Run-in Tests on a Cooling Channel Test Section for Investigations on the Applicability of High-Test Peroxide as Coolant in regeneratively cooled Space Propulsion Systems Julian SCHOLL - German Aerospace Center	288 - Liquid Film Cooling: Advanced Modeling and Efforts Towards Validation Christian PARAVAN - Politecnico di Milano - Italy	387 - Design Studies of Green Propellant based Thrusters for Spacecraft Propulsion Soumyadeep MONDAL - Indian Space Research Organization - India	254 - Qualification of freezing-resistive propellant for water-based resistojet Clément PROFIT - Bradford Space - Luxembourg	422 - A "plug & thrust" system combining VAT and MPDT technologies Julien SCHEINER - Comat - France	293 - Overview of rocket testing at the Westcott test facility (2022/2023) Edward MOORE - Airborne Engineering - United Kingdom
10:00	3	400 - Technology Roadmap for the development of a European Staged Combustion Rocket Engine for Reusable Launch Vehicles Vasileios PASTRIKAKIS - SoftInWay UK Ltd - United Kingdom	306 - Green disposal solutions for SRMs dismantling and energetic materials production wastes Sébastien KIEFFERT - ArianeGroup - France	498 - Design and placing into operation a 25 kN regeneratively cooled LOX/LNG thrust chamber for the LUMEN-Project Jan HAEMISCH - Institute of Space Propulsion, German Aerospace Center - Germany	354 - Development and Test of a Methalox Engine Injector with Distributed Micro-Injection Christian BAUER - Technische Universität München - Germany	638 - Using Finite Element Techniques to Rapidly Create Slosh Analog Models for Arbitrary Geometries Nathan ANDREWS - Southwest Research Institute - United States	494 - Lessons learned from the development and testing of the novel green hypergolic propellant HIP_11 Felix LAUCK - DLR Institute of Space Propulsion - Germany		520 - Metal Plasma Thruster (MPT): from garage to orbit in 4 years Kent FRANKOVICH - Benchmark Space Systems - United States	389 - Development of testing facilities for electric propulsion in United Arab Emirates Anton IVANOV - Technology Innovation Institute - United Arab Emirates
10:20		COFFEE BREAK								
		SESSION 10 Maturation Programs overview 2	SESSION 11 Solid & Hybrid Propulsion Programs	SESSION 12 Thrust Chamber - Modeling 1	SESSION 13 Development & Qual of Components for Biprop Systems	SESSION 14 Monopropellant Thrusters	SESSION 15 Nuclear Power Systems	SESSION 16 Water electrolysis propulsion	SESSION 17 Electric Propulsion Qualification & Flight Programs	SESSION 18 Tests Facilities & Experimental Techniques
Chair		Didier BOURY - ArianeGroup	Fabrice MARTIN - ArianeGroup	Dirk SCHNEIDER - ESA	Emilio R GORDON - SWRI	Helmut CIEZKI - DLR	Jorge Ruiz TORRALBA - ESA	James SADLER - URA Thrusters	Olivier DUCHEMIN - Safran	Victor FERNANDEZ VILLACE - ESA
10:40	1	558 - Recent Research Activities on HYPROB OX/CH4 Demonstrators Line Daniele RICCI - CIRA - Italian Aerospace Research Center - Italy	084 - Ariane 5 Solid Rocket Motor (MPS): success story of a robust design Nicolas RUMEAU - ArianeGroup - France	057 - Modelling of heat transfer in very rough cooling channels Jan ÖSTLUND - GKN Aerospace Engine Systems Sweden - Sweden	050 - Development of the High Performance, 25lbf LEROS ACE-25 Engine Robert WESTCOTT - Nammo UK Ltd - United Kingdom	126 - Results of ESA-GreenRAIM Test Activities Part 1: Experimental Investigation of a 1 Newton Hydrogen Peroxide Monopropellant Research Thruster Florian MERZ - German Aerospace Center (DLR) - Germany	116 - Development of a transient Nuclear Space Reactor model for Nuclear Thermal Propulsion and Nuclear Electric Propulsion within EcosimPro/ESPSS. Shankara COELLO ESCOBAR - Empresarios Agrupados Internacional - Spain	015 - Plasma properties characterization of oxygen-fuelled Hall Effect Thrusters for Water Electrolysis propulsion Jesús Manuel MUÑOZ TEJEDA - Imperial College London - United Kingdom	232 - MUSIC Hall effect thruster and ARM resistojets as a Multi-modal Electric Propulsion Engine (MEPE): product concept, system design & development, and flight qualification Kai Sheng KHOO - Aliena Pte Ltd - Singapore	509 - Development and operations of green space propulsion test facilities complex for vacuum and atmospheric conditions at lukasiewicz Research Network – Institute of Aviation. Tobiasz MAYER - Institute of Aviation - Poland
11:00	2	541 - CNES/JAXA Cooperation: Experimental Studies on Hydrodynamic Face Seals in LOX and LH2 for Rocket Engine Turbopumps Dynamic Seals Package Hiromitsu KAKUDO - JAXA - Japan	599 - Development Status and Future Objectives of P160c, Common Solid Rocket Motor for Ariane 6 Block 2 And Vega-C/Vega-E Launchers María Luisa FREZZOTTI - EUROPROPULSION - France	138 - Conjugate Heat Transfer Numerical Simulations of a Methane-Oxygen Liquid Rocket Engine Mario Tindaro MIGLIORINO - Sapienza University of Rome - Italy	107 - Achieving Thermal Equilibrium in Nitrous Oxide Based, Bi-Propellant Thrusters Romain GARBY - Dawn Aerospace - New Zealand	040 - Results of ESA-GreenRAIM Test Activities Part 2: Experimental Investigation of a 1 Newton Nitrous Oxide Monopropellant Research Thruster Till HÖRGER - DLR - Germany	336 - Towards interplanetary journeys: Modelling of a NEP system with EcosimPro Enrico BRAGALLI - OHB System AG - Germany	163 - Conceptual design of a water electrolysis propulsion for micro lunar orbiter Kyun Ho LEE - Sejong University - South Korea	303 - Flight Qualification of the Orbion Aurora Electric Propulsion System Scott HALL - Orbion Space Technology - United States	018 - Verification of Dynamic Pressure Response Measurement Using Multiplexed Fiber Bragg Gratings in MMX System Firing Test Kohji TOMINAGA - JAXA - Japan
11:20	3	180 - Propulsion as a gateway to a new space economy - Innovations in Propulsion within ESA'S Future Launcher Preparatory Programme (FLPP) Kate UNDERHILL - ESA - France	487 - From ground to space: an overview of the propulsion systems development at Hylmpulse Jérôme MESSINEO - Hylmpulse Technologies Germany	216 - Experimental and Numerical Investigation of Frictional Behaviour and Heat Transfer in 3D Printed Rocket Engine Cooling Channels Tiziano SANTESE - Technical University of Munich - Germany	373 - Development Status and Demonstration Test Results of the S25 Bi-Propellant Thruster Ulrich GOTZIG - ArianeGroup GmbH - Germany	113 - Development of Low-cost Monopropellant 20N Thruster for the Launch Vehicle RCS Masahiro TAKAHASHI - IHI Aerospace - Japan	462 - Status, challenges, and requirements for European thermonuclear propulsion system for space exploration Marcos FUENTES - Tekniker - Spain	179 - Development and Characterization of Novel Static Water Fed Electrolyser for a Satellite Water Propulsion System Alexandros VIKAS - Institute of Space Systems, University of Stuttgart (IRS) - Germany	344 - The RIT 2X product development and qualification program Jan-Patrick PORST - ArianeGroup GmbH - Germany	062 - Demonstration of data collection and processing for technology building with propulsion system failure diagnosis utilized the MMX propulsion firing test Kaname KAWATSU - JAXA - Japan
11:40	4		528 - Results and Achievements of the ENVOL Project Gianluca LIGGIERI - Nammo Raufoss AS - Norway	443 - Modeling postcritical two-phase heat transfer in EcosimPro/ESPSS environment Matteo FIORE - Sapienza University of Rome - Italy	475 - Design Study and Sub-Scale Demonstrator Development for a 25-30 kN LOX / METHANE Aerospoke Engine for Lunar Lander Application Florian DITSCHKE - TUD Dresden University of Technology - Germany	135 - Catalyst Chamber Resonance Dynamics in sub-Newton Chemical Propulsion Systems Francesco GARRONE - Pangea Aerospace - Spain	642 - Feasibility of an European NEP system: a RocketRoll study. Alessia SIMONINI - TRACTEBEL ENGINEERING S.A. - Belgium	434 - Evaluation of Transpiration Cooling for Hydrogen/Oxygen Thrusters in Water Electrolysis Propulsion Systems Sascha DENGLER - Technical University of Munich - Germany	465 - 20 years of electric propulsion in-flight experience on Airbus satellites Carine PONT - Airbus Defence and Space - France	318 - Verification of a Novel Collector-Thrust Measurement using a Low-Power Hall-Effect Thruster Oliver NEUNZIG - Technische Universität Dresden - Germany
12:00	5		607 - Development of the Solid Propulsion System for deorbitation manoeuvres with a dedicated Thrust Vector Control Pawel NOWAKOWSKI - Institute of Aviation - Poland	228 - Influences of Hydrocarbon Impurities on Heat Transfer Deterioration for Supercritical LNG Flowing in Cooling Channel Ibraheem NASSER - Technical University of Munich - Germany		556 - On-orbit Demonstration of "Decontamination" of cold-fired ECAPS Thruster Wilhelm DINGERTZ - ECAPS AB - Sweden	115 - Preliminary European reckon on nuclear electric propulsion for space applications (RocketRoll) Markus PEUKERT - OHB System AG - Germany	624 - Checkout of a Cathode Vapour Feed Electrolyser in Vacuum Operation Juliusz SARYCZEW - ESA-ESTEC - The Netherlands	504 - TETRA Propulsion System Status Jaime PEREZ LUNA - Thales Alenia Space UK - United Kingdom	630 - Disruptive Experimental Electric Propulsion Laboratory (DEEP Lab) Sundeep PATEL - Magdrive Ltd - United Kingdom
12:20		LUNCH								

<p align="center">ROUND TABLE #4 : UK space propulsion landscape and opportunities for international collaboration</p> <p align="center">Moderator : Adam BAKER, Cranfield</p> <p align="center">Sam Wilson, AIRBUS - Adam WATTS, NAMMO - Andrew RATCLIFFE, UKSA - Michael DUNCAN, Skyrora - Thomas CLAYSON, MagDrive</p>										
		SESSION 19 Engines & stages developpement & tests 1	SESSION 20 Solid Rocket Motors 2	SESSION 21 Thrust Chamber design 1	SESSION 22 ESPSS Workshop	SESSION 23 Storage & Distribution of Green Propellants	SESSION 24 Combustion	SESSION 25 Water propulsion systems	SESSION 26 Electric Propulsion for Deep Space Exploration	SESSION 27 Manufacturing Techniques I
Chair		Gilles VIGIER - 3AF	Jérôme ANTHOINE - ONERA	Rogier SCHONENBORG - ESA	Johan STEELANT - ESA	Olga MOTSYK - ESA	Yohann TORRES - ESA	Stephen GOODBURN - AIRBUS	Roger MYERS - R Myers Consulting, LLC.	Gerard ORDONNEAU - ONERA
15:10	1	548 - Status of the development of a liquid cryogenic rocket engine called STAR Jean-Philippe ROCCHI - SIRIUS SPACE SERVICES - France	123 - The basic design of laser initiated detonator and investigation results of the ignition characteristics Yoshiki MATSUURA - IHI Aerospace - Japan	395 - Comparison of Sodium Borohydride with Additives Abilities to Hypergolic Ignition of Fuel-Hydrogen Peroxide Green Bipropellants Célia SOUDARIN - ISAE ENSMA - France	ESPSS Workshop	252 - Microencapsulated hydrocarbon fuels in hydrogen peroxide gels: The next step toward high-performance monopropellants Robin SCHOLL - German Aerospace Center (DLR) - Germany	204 - Spray Combustion Visualization of Sheet-impinging Injector for Hypergolic Fuel and H2O2 Hyeonjun IM - Korea Advanced Institute of Science and Technology (KAIST) - South Korea	051 - Water Propulsion: Developments for an In-Orbit Demonstration Ulrich GOTZIG - ArianeGroup GmbH - Germany	327 - Deep Space Cubesat Propulsion Systems: a General Overview of the Main Features, Challenges and Solutions Giorgio SAITA & Giovanni FUMO - Argotec - Italy	004 - Cold Spray Additive Manufacturing (CSAM) – an economical manufacturing method to shorten the time to market for large space propulsion components Markus BROTSACK - Impact Innovations GmbH - Germany
15:30	2	316 - LUMEN, the test bed for rocket engine components: Results of the acceptance tests and overview on the engine test preparation Tobias TRAUDT - German Aerospace Center (DLR) - Germany	467 - Effect of basket configuration on performance dispersion in pyrotechnic igniters employing BKN03 pellets Giulia PELLA - Avio - Italy	375 - Design Methodology for a Regenerative Liquid Rocket Engine manufactured by LPBF Antoine MARCHAND - EPFL ROCKET TEAM - Switzerland		515 - Material Compatibility of Hydrogen Peroxide for Propulsion Engineers Laura SMITH - Benchmark Space Systems - United States	530 - Modelling of Hydrazine Droplet Evaporation and Combustion in small Rocket Thrusters Tobias ECKER - DLR - Germany	439 - Overview of water propulsion developments at Airbus Defence & Space Sam WILSON - Airbus Defence and Space - United Kingdom	114 - Enabling high-power propulsion systems for large scale transportation, from Earth orbits and the cis-lunar region to Mars and beyond Julia GRILL - Institute of Space Systems, University of Stuttgart (IRS) - Germany	081 - Cryogenic Spray Characteristics of a Metal Additive Manufactured Gas-Liquid Pintle Injector for Throttleable Rocket Engines Subeom HEO - Seoul National University - South Korea
15:50	3	397 - Towards a new Class of Engine for Future Heavy Lift Launch Vehicles – A Stepwise Approach Miguel MARTIN BENITO - CNES - France	282 - Ignition model improvement through iterative Bayesian inference in the frame of Small Scale Firing Tests Olivier ORLANDI - ArianeGroup - France	294 - Research Combustor 'N': Combustion Chamber With Large Optical Access for Injection and Combustion Characterization at Sub- And Supercritical Pressure Conditions Jan MARTIN - German Aerospace Center (DLR) - Germany		523 - Hydrogen Peroxide Storability and Compatibility Verification Dagmara REGLIŃSKA - Jakusz-Spacetech sp. z o.o. - Poland	248 - Evaluation of DFI Flight Data to Reproduce Engine Combustion Chamber Dynamics Pedro Jose HERRAIZ ALIJA - ESA - The Netherlands	454 - Sustainable Water Propulsion: A Green Horizon for Satellite Propulsion Systems Nuno FERNANDES - Omnidea-RTG - Germany	171 - Propulsion architecture enabling an interstellar medium exploration mission to 200 astronomical units in 25 years Christophe KOPPEL - KopooS Consulting Ind - France	130 - ICME framework for functionally graded materials design for additive manufacturing of space components John ARISTEIDAKIS - QuesTek Europe AB - Sweden
16:10	4	424 - System Aspects of European Reusable Staged-Combustion Rocket Engine SLME Martin SIPPEL - DLR-SART - Germany	034 - Tetrazene-based binding polymers as energetic ingredients for solid propulsion Chaza DARWICH - Université Claude Bernard Lyon1/LHCEP - France	429 - Multi-scale analysis of textural atomization in LOx-CH4 rocket engine subcritical flames Leonardo GEIGER - ONERA - France		566 - Feasibility analysis of a novel green propulsion system based on self-pressurized propellants Alberto SARRITZU - University of Pisa - Italy	223 - Ignition and flame stabilization in liquid bipropellant combustion using hydrogen peroxyde catalytically decomposed hot gases Camille COTTENOT - PPrime - France	611 - Technology Consolidation and Preliminary Design of a Superheated Water RCS Giulio CORAL - ThrustMe - France	063 - Exploration of the Neptune vicinity using electric propulsion Konstantinos KATSONIS - DEDALOS Ltd - Greece	271 - A novel multifunctional additive manufactured lattice structure design for thermal and mechanical improvement of liquid rocket engine injector face plates Matteo CRACHI - Politecnico di Torino - Italy
16:30	COFFEE BREAK									
		SESSION 28 Engines & stages developpement & tests 2	SESSION 29 Solid Rocket Motors 3	SESSION 30 Thrust Chamber - Modeling 2	SESSION 31 Air Breathing Orbital Propulsion	SESSION 32 Decomposition of Green Propellants	SESSION 33 Program Overviews	SESSION 34 Power Processing for Electric Propulsion	SESSION 35 Ion Engines	SESSION 36 Manufacturing Techniques II
Chair		Lilian PREVOST - CNES	Didier BOURY - ArianeGroup	Jérôme ANTHOINE - ONERA	Davar FEILI - ESA	Ferran VALENCIA BEL - ESA	Yohann TORRES - ESA	Simone CIARALLI - OHB	Neil WALLACE - ESA	Gerard ORDONNEAU - ONERA
16:50	1	549 - Multifunctional Upper Stage Express Propulsion System Concepts and Technologies Christian HESSEL - ArianeGroup GmbH - Germany	270 - Computer-aided evaluation of the combustion behavior of ADN/GAP solid rocket propellants Philip PIETREK - Fraunhofer Institute for Chemical Technology (ICT) - Germany	247 - LOx/CH4 Coaxial injector non linear flame transfer function and 2D parametric axisymmetric LES simulations Maxime BOUTON - ONERA - France	064 - Modeling and diagnosing the electric thruster plasma in case of fueling by CO2 collected from the Mars atmosphere Chloe BERENGUER - DEDALOS Ltd - Greece	391 - Influence of Catalyst Composition on the Performance of a Throttled Bipropellant Thruster Vincent Mario Pierre UGOLINI - Korea Advanced Institute of Science and Technology (KAIST) - South Korea	037 - Propulsion Systems Trends in Italian Space Agency ALCOR Program Giuseppe LECCESE - Italian Space Agency (ASI) - Italy	029 - Airbus DS - Space Electronics, Power Processing Units last developments and technologies status Eric TREHET - Airbus Defence and Space - France	197 - GIESEPP-MP (Gridded Ion Engine Standardized Electric Propulsion Platforms – Medium Power) Status, Results and Outlook Jan Patrick PORST - ArianeGroup GmbH - Germany	028 - Setting Weld Quality Control Criteria for Space Propulsion Hardware David GILLIS - Airbus Defence and Space - United Kingdom
17:10	2	536 - CNES support on LOX/Methane Prométhéus development Lilian PREVOST - CNES - France	151 - Coupled-Level-Set-and-Volume-of-Fluid (CLSVOF)-Model for the Simulation of heterogenous Solid Rocket Motors Michael MOROFF - Fraunhofer Institute for Chemical Technology (ICT) - Germany	263 - Large-Eddy Simulation of LOx-CH4 supercritical flames Louis DUHEM DUVILLA - CORIA - CNRS, Normandie Université, INSA de Rouen Normandie - France	377 - Overview of ABEP System Development Advances at the Institute of Space Systems Elizabeth GUTIÉRREZ - Institute of Space Systems, University of Stuttgart (IRS) - Germany	596 - Influence of Catalytic Bed Configuration on the Unsteady Behavior of 500 mN HTP Thruster Angelo PASINI - University of Pisa - Italy	065 - European Space Agency Activities on Electric Propulsion Davina DI CARA - European Space Agency - The Netherlands	070 - PPU Developments at Thales Alenia Space in Belgium Eric BOURGUIGNON - Thales Alenia Space in Belgium - Belgium	250 - Quantification of molybdenum caused by grid erosion inside the plasma of a radio-frequency ion thruster Felix BECKER - Justus-Liebig-University Giessen - Germany	510 - Testing of Additively Manufactured Thruster Injectors involving Self-Pressurized Propellants Davide ZUIN - Politecnico di Milano - Italy
17:30	3	162 - First Rocket Powered Flights of the Mk-II Aurora Spaceplane Using a 2.5 kN HTP-Kerosene Rocket Engine Ralph HUIJSMAN - Dawn Aerospace - The Netherlands	089 - An overview of thermal and ablation testing for high performance composite materials used as thermal protection systems for space propulsion applications Mathilde RIDARD - ArianeGroup - France	279 - Large Eddy Simulation of a Supersonic Kerosene Flame Florian KISSEL - CORIA - CNRS, Normandie Université, INSA de Rouen Normandie - France	573 - The BREATHE project: development of CubeSat-scale air-breathing electric propulsion Vittorio GIANNETTI - Scuola superiore Sant'Anna - Italy	014 - Pre-qualification of a Catalyst Bed for 420 N Green Bipropellant Engine Pawel SURMACZ - Lukaszewicz Research Network - Institute of Aviation - Poland	641 - From Future European Space Transportation needs to Technologies Sandrine PALERM - ESA-ESTEC - The Netherlands	231 - Power processing and electronic control units for sub-100 W Hall effect thrusters: design and qualification for space Nunki PONTIANUS - Aliena Pte Ltd - Singapore	363 - Holistic modelling of erosion processes in radio-frequency ion thrusters Konstantin KEIL - Justus-Liebig-University Giessen - Germany	
17:50	4	529 - Design, Manufacturing and Testing of a 6kN Green Throttleable Development Engine Bastien HÄMMERLI - Nammo Raufoss AS - Norway		361 - Numerical Simulation of Ignition and Flame Kernel Growth within an Annular AeroSPIKE Engine Adheena Gana JOSEPH - Technische Universität Dresden - Germany	572 - Attitude and Orbital Stability of Very Low Altitude Nanosatellites equipped with Air-breathing Electric Propulsion Ferrato EUGENIO - Sant'Anna School of Advanced Studies - Italy	553 - Measurement and real-time safety analysis of the combustion chamber temperature of green bipropellant LRE during experimental testing Łukasz WIEJA - Institute of Aviation - Poland	239 - Green Propulsion: A NASA GSFC Assessment Henry MULKEY - NASA GSFC - United States		617 - Ion optics lifetime assessment of a 30 cm Ring-Cusp discharge chamber operated with xenon and krypton Nazareno FAZIO - Mars Space Ltd - United Kingdom	
18:10	END OF DAY 2									
18:30	CIVIC RECEPTION Exhibition Hall									

EXHIBITION

WEDNESDAY 22 MAY 2022 // DAY 3

KEYNOTE SPEECH #3: From 1N to 30kN thrust, a journey into Storable Space Propulsion Jan ALTING, ArianeGroup GmbH, Germany									
	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7	ROOM 8	ROOM 9
08:30									
	SESSION 37 Plume & Aerodynamic effects evaluation	SESSION 38 Hybrid Propulsion 1	SESSION 39 Thrust Chamber - Modeling 3	SESSION 40 Mission Scenarios for Exploration & Orbit Transfer Services I	SESSION 41 Chemical Propulsion Systems & Components I	SESSION 42 Green Propellant Chemical Propulsion Systems	SESSION 43 Hall Thrusters Development & Qualification	SESSION 44 Fluid Systems & Propellant Gauging	SESSION 45 Iodine Thrusters
Chair	Csaba JEGER - ESA	Yann TALAMONI - EUROPROPULSION	Dirk SCHNEIDER - ESA	Stephen GOODBURN - AIRBUS	Elliott WORSLEY - Nammo	Armin HERBERTZ - ESA	Davina DI CARA - ESA	Adrien Jacques BOIRON - MaiaSpace	Neil WALLACE - ESA
09:20	1 310 - Investigating the Plume-Surface-Interaction on the Lunar Surface Using a Coupled CFD-DSMC Approach Jannis PETERSEN - TUD Dresden University of Technology - Germany	041 - Advanced Hybrid Rocket Fuels Niklas WINGBORG - Swedish Defence Research Agency, FOI - Sweden	237 - Overview of CFD modelling activities on DLR BKN combustion chamber Jan VAN SCHYNDEL - German Aerospace Center (DLR) - Germany	172 - Reference Missions, Mission Level Needs and Evaluation of Candidate Technologies for High Power Electric Propulsion Nadim MARAQTEN - University of Stuttgart - Germany	259 - Surge Pressure Testing of Flight-Like Propulsion Components Wanyi NG - NASA - United States	218 - Manufacturing processes, additives, and their influence on Lithium-Perchlorate & Polyvinyl-Alcohol-based electric solid propellants Hertel JONATHAN - TUD Dresden University of Technology - Germany	017 - PPS*X00 HET - On the final path towards the qualification of a subkilowatt-class thruster Claude-Martin BRITO - Safran Spacecraft Propulsion - France	007 - Test and Validation of Pressure Fed Rocket Engine Test Stands Feedline Systems Ufuk KAYABASI - Roketsan Inc. - Turkey	031 - Development of low-power iodine-fed Hall thruster propulsion system Alfio Emanuele VINCI - ThrustMe - France
09:40	2 565 - Aerothermal analysis of the RETPRO flight configuration Mariasole LAURETI - DLR - Germany	167 - Understanding Pressure Time Oscillations for CO2 Based Combustion in Hybrid Rockets Ozan KARA - Technology Innovation Institute United Arab Emirates	210 - Advanced Flamelet Modeling Approach for Transcritical Combustion in Liquid Rocket Engine Thrust Chambers Marvin POMMERENING - Technical University of Munich / ArianeGroup GmbH - Germany	264 - Design considerations for the development of two Bi-propellant Chemical Propulsion systems for the Mars Sample Return - Earth Return Orbiter Kieran HASHMI - Airbus Defence and Space - United Kingdom	366 - Characterisation of a Modular Acoustic Ignitor for Small In-Space Thrusters Jack COGHEN-BREWSTER - Protolaunch - United Kingdom	577 - Development of the Engineering Model for a Modular HTP-based CubeSat Propulsion System Alberto SARRITZU - University of Pisa - Italy	103 - Summary of NASA Progress on the Development and Qualification of a 12-kW Hall-Effect, Solar Electric Propulsion Thruster Joel ROBINSON - NASA - United States	072 - SMARTTS - An innovative propellant gauging technology using Electrical Capacitance Tomography Laurene DELSUPEXHE - European Space Agency - The Netherlands	032 - Performance Mapping of the NPT30-12 Iodine-Propelled Thruster Antoine BORÉ - ThrustMe - France
10:00	3 376 - A shock cell deformation due to a perpendicular jet-jet interaction at a low-pressure atmospheric condition Andrew WILSON - Osaka Institute of Technology - Japan	289 - Combustion in a Non-conventional Hybrid Rocket Engine: Lab-scale Testing of a Vortex Flow Pancake Valerio SANTOLINI - Politecnico di Milano - Italy	581 - Efficient multiphysics simulations of LRE combustion chambers using tabulated chemistry Davide SCHINTU - "La Sapienza" University of Rome - Italy	491 - Roadmap to In-Space Transportation Infrastructure enabling a sustainable Space-OHB's vision Markus PEUKERT - OHB System AG - Germany	447 - Preliminary experimental characterization results of a freely expanding 10 N bi-propellant thruster plume Leonie BUNTROCK - German Aerospace Center (DLR) - Germany	627 - Vertue, an innovative propulsion module based on green technologies for orbital applications Giorgio GUBERNARI - Finis Terrae S.R.L. - Italy	550 - High-Power Electric Propulsion Systems at Sitael Andrea DI SARLI - SITAEI - Italy	105 - Development of a Fluid System and Simulator for Simultaneous High and Low Flowrates to Supply a Hollow Cathode and Cold Gas System for an Electrodynamic Tether Mission Rico NERGER - TUD Dresden University of Technology - Germany	038 - Lifetime testing campaign of the iodine-fed electric propulsion system Dmytro RAFALSKYI - ThrustMe - France
10:20	4 440 - CFD simulations of design and off-design stage separation in a space launcher through overset grids approach Alessia ASSONITIS - Sapienza University of Rome - Italy	325 - Advancements on Regenerative Cooling of Graphite Nozzle for Erosion Suppression Yuta MIYAHARA - Hokkaido University - Japan			403 - Liquid propulsion system simulation validated by the MMX system firing tests Yu DAIMON - Japan Aerospace Exploration Agency - Japan	241 - A novel high-performance HAN-based monopropellant Yang JUN - Shanghai Institute of Organic Chemistry - China	583 - Extended Throttling Range Characterization of the PPS*5000 Life Test Hall Thruster Olivier DUCHEMIN - Safran Spacecraft Propulsion - France	546 - Development of Standard for Absolute Mass Flow Measurement to be Used with Any Type of Common Gas Ahmed HASHAD - AST Advanced Space Technologies GmbH - Germany	184 - iFACT-MP: Multi-kilowatt iodine electric propulsion development Max VAUPEL - Airbus Defence and Space - Germany
10:40	COFFEE BREAK								
	SESSION 46 LRE Control	SESSION 47 Hybrid Propulsion 2	SESSION 48 Thrust Chamber design 2	SESSION 49 Mission Scenarios for Exploration & Orbit Transfer Services II	SESSION 50 Chemical Propulsion Systems & Components II	SESSION 51 Advanced Propulsion Concepts	SESSION 52 Development & Qual of Green Bipropellant Thrusters & Propellant	SESSION 53 Micropropulsion I : development, qualification, in flight results	SESSION 54 Iodine & alternative Propellant Thrusters
Chair	Gilles VIGIER - 3AF	Jérôme ANTHOINE - ONERA	Lilian PREVOST - CNES	Stephen GOODBURN - AIRBUS	Jorge Ruiz TORRALBA - ESA	David PERIGO - ESA	Bastien HÄMMERLI - Nammo	Alberto GARBAYO - AVS	Davina DI CARA - ESA
11:00	1 297 - Overview of Future Rocket Engine Control Systems Kai DRESIA - German Aerospace Center (DLR) - Germany	408 - Experimental Investigation of Paraffin Combustion in a Small-Scale Hybrid Rocket Engine Riccardo GELAIN - Université libre de Bruxelles - Belgium	362 - Introduction of Topology Optimisation in Regenerative Cooling Channel Design within Liquid-Rocket Engines Jack TUFFT - University of Glasgow - United Kingdom	371 - CubeSat missions - reloaded Carsten SCHARLEMANN - FHWN - Austria	008 - Design, Test and Validation of Cavitating Venturi Element Using in LPRE Mehmet Can KÖSE - Roketsan Inc. - Turkey	066 - Power Supplies Design and Characterization for the Spherical Tokamak Thruster: A Novel High-Power Plasma Propulsion System Hamda AL-ALI - Imperial College London - United Kingdom	365 - Development of a 20N GOX/GH2 Thruster for IOSM Applications Jack COGHEN-BREWSTER - Protolaunch - United Kingdom	048 - Development of a 1IU module for Microsatellite-Friendly Multi-Purpose Propulsion System Hiroyoshi YASUHIRA - Tokyo Metropolitan university - Japan	206 - Development of NPT30 iodine ion thruster from conception to mass production. Elena ZORZOLI ROSSI - ThrustMe - France
11:20	2 315 - Stabilizing control design for liquid propelled rocket engines Jules GIBART - ONERA - France	469 - Numerical activities on the paraffin-based fuel MTM in the framework of the PHAEDRA project Daniele CARDILLO - CIRA - Italian Aerospace Research Center - Italy	384 - Experimental Validation of Heat Damage Prevention of a Two-Row Pintle Injector Dokeun HWANG - Korea Aerospace Research Institute - South Korea	308 - openPlumeCP modelling: to the moon and beyond Bayrem ZITOUNI - OHB - Germany	009 - Development of A Hydrazine Cavitating Flow Control Valve For Space Propulsion Application Francesco CIVERRA - Thales Alenia Space Italy - Italy	484 - A magnetic reconnection based thruster for high specific impulses space missions Giulia BECATTI - University of Stuttgart - Germany	409 - The qualification of ISPTech's 1N and 22N green bipropellant thrusters with N2O/C2H6 for an in-orbit demonstration Lukas WERLING - DLR Institute of Space Propulsion - Germany	076 - Flight heritage and status of the ENPULSION propulsion systems: NANO, NANO R3/AR3 and MICRO David KREJCI - Enpulsion - Austria	309 - Iodine-compatible Neutraliser Development for Electric Propulsion Philipp BECKE - Airbus Defence and Space - Germany
11:40	3 419 - From the first engine control evaluations to the Vinci application, the first European Engine numerically controlled in Flight Léonard OUAKRAT - ArianeGroup - France	353 - A Review of the Experimental and Numerical Activities on a Hydrogen Peroxide-based Hybrid Rocket for Small Satellites Sergio CASSESE - UNIVERSITY OF NAPLES "FEDERICO II" - Italy	312 - Influence of Flow Regimes on Nozzle Throat Heat Transfer in a Capacitively Cooled Thrust Chamber Tobias STELZER - Technical University Braunschweig - Germany	522 - A Comprehensive Extension of Rocket Equation Analyses for Separately Powered Space Propulsion under Constant Exhaust Velocity Julia GRILL - Universität Stuttgart - Germany	043 - Simulation of bi-propellant reaction control thrusters based on nitrous oxide and hydrocarbons Stefan FECHTER - German Aerospace Center (DLR) - Germany	490 - Plasma brake for deorbiting telecommunication satellites Pyr PEITSO - Aurora Propulsion Technologies - Finland	518 - Qualification Testing of a High-Performance 22N Green Bipropellant Rocket Engine Using High-Test Peroxide and Octane Thomas WHITE - Benchmark Space Systems - United States	093 - MicroThruster endurance test for LISA: preliminary results of a challenging trial on the thruster valve Francesco MANCINI - Leonardo SpA - Italy	539 - Building Blocks for Iodine Thrusters: Perspective and Targets of the Project BOOST Fabrizio PONTI - University of Bologna - Italy
12:00	4 622 - Mathematical modelling of active mode of onboard pressurisation system of propellant tank of cryogenic stage S MURUGAN - Liquid Propulsion Systems Centre/ ISRO - India	372 - Novel Student Developed Re-ignitable ABS-Nitrous Hybrid Rocket Engine Development Moana Nomi LENGKEEK - TU Delft - The Netherlands	423 - Investigation of Liquid Jet Into Crossflow for rectangular injection orifices in green Liquid Rocket Engine application Michal RANACHOWSKI - Lukasiewicz Research Network - Institute of Aviation - Poland	590 - Regolith Contamination by Thrusters for Sample Return Missions David EVANS - Fluid Gravity Engineering Ltd - United Kingdom	054 - Propulsion System Concepts and Components to support Clean Space Ulrich GOTZIG - ArianeGroup GmbH - Germany	628 - Magdrive: next generation electric propulsion, to address the rapidly changing space environment and market Charlie CLARK - Magdrive Ltd - United Kingdom	348 - HIM_30: Hot-Firing Tests and Characterization of a Green Hypergolic Propellant based on Ionic Liquids and Hydrogen Peroxide Sophie RICKER - German Aerospace Center (DLR) - Germany	337 - Design and test of thermal vacuum chambers for testing of electric propulsion systems integrated in CubeSat Carsten SCHARLEMANN - FHWN - Austria	634 - Characterisation of a Small Ring-Cusp Gridded Ion Engine using Alternative Propellants Nazareno FAZIO - Mars Space Ltd - United Kingdom
12:20	LUNCH								

EXHIBITION

14:00	STARTUP CONTEST									
	SESSION 55 LRE modeling	SESSION 56 Propellant Behavior Modeling	SESSION 57 LRE Ignition Systems & Effect	SESSION 58 Propellant Management for Chemical Propulsion I	SESSION 59 Chemical Propulsion Systems & Components IV	SESSION 60 Fluid Hammer in Flow Systems	SESSION 61 Hall Thruster Research & Development I	SESSION 62 Micropropulsion II	SESSION 63 Flow Systems for Electric Propulsion	
Chair	Fabrice MARTIN - ArianeGroup	Sébastien BIANCHI - Air Liquide Advanced Technologies	Gilles VIGIER - 3AF	Kate UNDERHILL - ESA	Pedro HERRAZ ALIJAS - ESA	Johan STEELANT - ESA	Danylo SHCHERBAK - URA Thrusters	David KREJCI - ENPULSION	Neil WALLACE - ESA	
15:30	1 444 - Updating the pump and injector plate components of the ESPSS library in view of transient analysis of LOx/Methane engines Beatrice LATINI - Sapienza University of Rome - Italy	096 - Addressing CFM Modeling Gaps for Application into NASA'S Future Cutting Edge Missions Wesley JOHNSON - NASA Glenn Research Center - United States	140 - PROMETHEUS Low-Cost Methane Torch Ignition System Development Status and Test Results Thomas GOVAERT - Aerospace Propulsion Products (A.P.P.) B.V. - The Netherlands	106 - Utilizing Neutral Buoyancy for Ground Based Validation of Propellant Management Devices of Liquid Oxygen Tanks Emilio GORDON - Southwest Research Institute - United States	453 - Space qualified Manual Ball Valve for on-ground operations Elisabeth FIRCHAU - Omnidea-RTG - Germany	190 - Fluid Hammer Phenomena in a Nitromethane-based Green Propellant in Hot Gas Test Runs Sebastian KLEIN - German Aerospace Center (DLR) - Germany	229 - JAXA 1-kW Class Long-Life Hall Thruster System v800 Employing a Novel Ignition Mechanism Shinatora CHO - Japan Aerospace Exploration Agency - Japan	251 - Cathode spots dynamics in a high-current Vacuum Arc Thruster Etienne MICHAUX - CNRS - France	097 - Development of a compact xenon propellant management assembly for low-power Hall effect thrusters: system design, hardware prototype, and pressure qualification Matteo LATERZA - Aliena Pte Ltd - Singapore	
15:50	2 473 - Comparison of EcosimPro/ESPSS based Combustion Modeling Approaches for Gas Generators Jeannine SCHMACKA - German Aerospace Center (DLR) - Germany	334 - Liquid Propellant Dynamics in Microgravity Induced by Vertical Impact of Landings on Martian Moon Yusei YAHATA - Graduate School of Engineering, The University of Tokyo - Japan	245 - Plasma Breakdown Laser Ignition Applied to a 100 kN LOX/Methane Gas Generator Sebastian SOLLER - ArianeGroup GmbH - Germany	137 - Development of a Carbon Dioxide Cool Gas Generator for the pressurization of a blow down liquid propulsion system Berry SANDERS - HDES Service and Engineering B.V. - The Netherlands	500 - Self-Pressurization Technology and Satellite Criticalities Andrea ROVELLI - Politecnico di Milano - Italy	386 - Modelling of Fluid Hammer in Spacecraft Propulsion Systems Korlam VAMSI KRISHNA - Indian Space Research Organization - India	592 - Miniaturization of Electric Propulsion Subsystems based on Hall-Effect Thruster Technology Merve BALABAN - BERLIN SPACE - Germany	394 - Design and micro 3D printing of electrospray emitters with an integrated modular extraction electrode Fynn KUNZE - Justus-Liebig-University Giessen - Germany	211 - High Pressure Flow Control Units for Electric Propulsion Modules Thomas BRUS - AST Advanced Space Technologies GmbH - Germany	
16:10	3 339 - Design and experimental investigation of an optical fibre based ignition system for space propulsion systems Michael BÖRNER - DLR - Germany	272 - Throttling Valve Design for Providing Control and Linear Adjustment of Thrust Level in Liquid Propellant Rocket Engines Kamil Yekta US - Roketsan Missiles Inc. - Turkey	203 - Development of the Propulsion System for the COPERNICUS missions CRISTAL and LSTM Michael BIEHLER - ArianeGroup GmbH - Germany	606 - A 20 kW Magnetically Shielded Nested Hall Thruster: Status and Perspectives of the TANDEM project Francesco MARCONCINI - University of Pisa - Italy	620 - Flight of the pulsed plasma thruster PETRUS 1J on the CubeSat SONATE-2 Felix SCHÄFER - University of Stuttgart - Germany	305 - Airbus DS Electrical Propulsion Fluidic Chains Transformation Achievements and Needs Pablo LOPEZ - Airbus Defence and Space - France				
16:30	COFFEE BREAK									
16:50	KEYNOTE SPEECH #4: Overview of Breakthrough Propulsion Activities at TU Dresden - Exploring Possible EM-Gravity Interactions Prof. Martin TAJMAR, Technische Universität Dresden, Germany									
	SESSION 64 Air Breathing Propulsion	SESSION 65 Propellant Behavior Modeling & Sloshing	SESSION 66 Operations	SESSION 67 Pressure Regulators	SESSION 68 Alternative green propellants	SESSION 69 Cold Gas Thrusters	SESSION 70 Hall Thruster Research & Development II	SESSION 71 Micropropulsion III	SESSION 72 Hollow Cathodes	
Chair	Csaba JEGER - ESA	Emilio R GORDON - SWRI	Marc VALES - DASSAULT AVIATION	Andreas FLOCK - DLR	Wilhelm DINGERTZ - ECAPS	Matthew SMITH - ESA	Danylo SHCHERBAK - URA Thrusters	David KREJCI - ENPULSION	Simone CIARALLI - OHB	
17:30	1 110 - Progress of sub-scale flight tests plan with ATRIUM engine Yuki SAKAMOTO - ISAS/JAXA - Japan	261 - Numerical Analysis on Flow Boiling in Microgravity with Subgrid-Scale Wall Boiling Model Yuki MIYARA - The University of Tokyo - Japan	230 - Mobile Hydrogen Peroxide Transport and Storage Container for Worldwide Rocket Launches Christopher GLASER - DLR - Germany	085 - High pressure reductor and regulator based on piezo technology: status-of-the-art, qualification results and future applications Francesco MANCINI - Leonardo SpA - Italy	145 - Hydrazine-Based Green Monopropellant Blends Robert MASSE - L3Harris - Aerojet Rocketdyne - United States	200 - Achievements of a High-Pressure Coldgas Thruster Development Jan-René HAFERKAMP - AST Advanced Space Technologies GmbH - Germany	020 - Utilisation of a Reconfigurable High-Temperature Superconducting Magnet to Improve the Operational Efficiency and Throttability of a Central-Cathode Electrostatic Thruster Christopher ACHESON - Victoria University of Wellington - New Zealand	267 - Feasibility and Optimization Study of a Miniaturized Resonance Igniter for CubeSats Application Yonghun LEE - TU Darmstadt - Germany	068 - Development of hollow cathodes for Hall effect thrusters at Aliena: design, ground testing and qualification for space George-Cristian POTRIVITU - Aliena Pte Ltd - Singapore	
17:50	2 497 - Enhancing the performance of solid-fuel dual scramjet through innovative design and numerical investigation Laurine HILLION - Hybrid Propulsion For Space - France	317 - Bubble cavitation in a cryogenic tank in micro-gravity conditions Annafederica URBANO - ISAE - Institut Supérieur de l'Aéronautique et de l'Espace - France	459 - Cryogenic Stages Maintenance Operations Approach for Future Reusable Launchers Jean-Philippe ROCCHI - SIRIUS SPACE SERVICES - France	185 - European-Made Mechanical Pressure Regulator for In-Space Use Marcus SJÖBERG - OHB Sweden AB - Sweden	374 - Investigation of Alternative Green Fuels for Chemical Bipropellant Propulsion Systems Ahmet Nihat KARCI - University of Southampton - United Kingdom	201 - ED (expansion-deflection) nozzles for cold-gas application Manuel FREY - ArianeGroup GmbH - Germany	092 - A 2D Direct implicit particle-in-cell method on non-orthogonal grids in Hall thrusters Zhaoyu WANG - harbin institute of technology - China	559 - MicroHETSat Electric Propulsion: In-Orbit Data Analysis Lucio TORRE - SITAEI - Italy	347 - Improving C12A7:2e- for the application in electric propulsion cathodes Nicolas Maria BAUER - Justus-Liebig-University Giessen - Germany	
18:10	3 534 - Development of a Compact Lightweight Micro-Channel Heat Exchanger (MCHX) for Reusable Launch Systems Alex RUSSEL - TWI Ltd - United Kingdom	582 - Non-Isothermal Sloshing for Space Applications: Experimental Characterisation under Reduced Gravity Conditions Francisco MONTEIRO - von Karman Institute for fluid dynamics - Portugal	416 - Feature Selection and Virtual Sensing Based Mixture Ratio Estimation for Liquid Propellant Rocket Engine Control Systems Andrea URGOLO - Silicon Austria Labs - Austria	258 - Pressure Regulator Model for Space Applications - Validation Test Results Keith BRODEK - Marotta Controls - United States	433 - Fault Detection and Recovery for a 1 Degree of Freedom Cold Gas Propelled Hopper through Adaptive Control Felix EBERT - Technische Universität München - Germany	160 - Development Testing on an Engineering Model of a 5 kW class Hall Effect Thruster Shekhar PANUGANTI - LPSC/ ISRO - India	605 - Development of a High-Current Cathode for the CHEOPS VH-BB Project. Carla GUIDI - University of Pisa - Italy			
18:30	END OF DAY 3									
19:30	GALA DINNER (19:00/19:15 : Bus transfer from SEC to evening venue) Awards Ceremony									

EXHIBITION

THURSDAY 23 MAY 2024 // DAY 4

08:30	KEYNOTE SPEECH #5: Prof KASAHARA (Nagoya University) presentation on rotating detonation engine Followed by ESA announcement on IP-CCI									
	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7	ROOM 8	ROOM 9	
	SESSION 73 Turbo pumps 1	SESSION 74 LRE Components Manufacturing	SESSION 75 Tests Facilities for Engines and Stages	SESSION 76 Propulsion in the Spacecraft Design Process	SESSION 77 Chemical Propulsion Systems & Components V	SESSION 78 Novel Technological Solutions for Propulsion Systems I	SESSION 79 Plasma Modelling	SESSION 80 Development & Qual of Green Monopropellant Thrusters I	SESSION 81 Innovative Propulsion for sustainable access to Space and in-Space transportation 1	
Chair	Marc VALES - DASSAULT AVIATION	Yohann TORRES - ESA	Yann TALAMONI - EUROPROPULSION	Stefan GREGUCCI - SITael	Stefano MATTEINI - ESA	Cristina DE PERSIS - ESA	Bayrem ZITOUNI - OHB	Wilhelm DINGERTZ - ECAPS	Nathalie GIRARD - CNES	
09:40	1 635 - Concept of an ultracompact LCH4/LOX turbopump for a 30KN upper stage Alexandru-Claudiu CANCESCU - National Research and Development Institute for Gas Turbines COMOTI - Romania	274 - Green-laser additive manufacture of a GRCop-42 LOX/LCH4 combustion chamber with compliant firewall Iain WAUGH - Airborne Engineering - United Kingdom	398 - Test and Maintenance Technologies of the Facility for LE-9 engine Firing Test Masaya IDO - JAXA - Japan	587 - Defining the Propulsion System Design Process in the Customer-Subcontractor Relationship Dustin HOLOHAN - Dawn Aerospace - The Netherlands	073 - Development and Operation Results of SLIM (Smart Lander for Investigating Moon) Propulsion System Keisuke MICHIGAMI - JAXA - Japan	370 - Simulation of Orbital Maneuvers with a Passive Zero-Boil-Off System Felix SCHILY - DeltaOrbit GmbH - Germany	139 - Self-consistent Coupling of Fluid and PIC Codes Willem VAN LYNDEN - Bologna University - Italy	021 - 20N class thrusters with HNP safe green monopropellant for small satellite propulsion systems Shinji IGARASHI - IHI Aerospace - Japan	047 - Propulsion solutions for long term sustainability of Space operations Christophe BONNAL - CNES - France	
10:00	2 213 - Tests on Active Axial Thrust Balancing System of a Pump for a Liquid Rocket Engine Soonsam HONG - Korea Aerospace Research Institute - South Korea	480 - Additive manufacturing process of a rocket engine thrust chamber assembly Horacio MOREIRA - Omnidea - Portugal	483 - FIRST Acoustic Results of A6 UPPER stage tests at P5.2 Gerhard KRÜHSEL - German Aerospace Center (DLR) - Germany	464 - Accommodation of auxiliary power supply kits onto launcher upper propulsive stages to improve satellite propulsion and extend their operational life Cristina COLAIANNI - ARIANESPACE - France	075 - Use of the Nammo LEROS 2b Apogee Engine for the Mars Sample Return Mission Robert WESTCOTT - Nammo UK Ltd - United Kingdom	010 - EPFB: Electric Pump fed supply for GEO satellite bi-propellant chemical propulsion systems Marta Pia TANGARO - TAS-I - Italy	175 - A self-consistent gradient-drift instability model of anomalous electron transport in the magnetic nozzle Shaun ANDREWS - University of Bologna - United Kingdom	067 - Design optimization of green monopropellant thruster for chugging instability reduction using reduced-order models Sukmin CHOI - Korea Advanced Institute of Science and Technology (KAIST) - South Korea	291 - Ice2Thrust: An end-to-end demonstration of the in-situ resource utilization of water for in-space propulsion Sören HEIZMANN - Technical University of Munich - Germany	
10:20	3 538 - Mitigation of excessive profile deviation and bend lines noticed during rolling of mechanically milled cylindrical shell panels of a propellant tank. Jayesh P - ISRO - India	511 - Computational Analysis of High-Altitude Test Facilities Alessandro MONTANARI - Sapienza University of Rome - Italy	527 - Satellite Prime optimized Propulsion responsibility and workshare distribution Timo KRONE - ArianeGroup GmbH - Germany	476 - Helium Solubility Predictions based on ESM1 flight data: A Reverse Engineering Approach Jorge RUIZ TORRALBA - ESA - The Netherlands	121 - Benefits and suitability of a pump-fed hydrazine propulsion system for space applications Andrea BINCI - Thales Alenia Space - Italy	265 - Optimizing Global Plasma Models: Incorporating Electron Energy Density Function for Enhanced Thruster Development Efficiency Philip PETERS - Technische Hochschule Mittelhessen - Germany	342 - Design and Performance Evaluation of a 5 N ADN-based Green Monopropellant Thruster with Low-Temperature Hydrazine Catalyst Burak Onur EKICI - Roketsan Inc. - Turkey	631 - ISRU hydrogen engine for sustainable planetary exploration Baker ADAM - Rocket Engineering Ltd - United Kingdom		
10:40	COFFEE BREAK									
	SESSION 82 Turbo pumps 2	SESSION 83 Aerospike design and tests	SESSION 84 Thrust Chamber - Tests 1	SESSION 85 Detonation Engines 1	SESSION 86 Artemis I - Orion Propulsion	SESSION 87 Novel Technological Solutions for Propulsion Systems II	SESSION 88 Microwave & RF Thrusters	SESSION 89 Development & Qual of Green Monopropellant Thrusters II	SESSION 90 Innovative Propulsion for sustainable access to Space and in-Space transportation 2	
Chair	Lilian PREVOST - CNES	Didier BOURY - ArianeGroup	Bertrand KLEIN - ESA	Gerard ORDONNEAU - ONERA	Pedro HERRAIZ ALIJAS - ESA	Victor FERNANDEZ VILLACE - ESA	Olivier DUCHEMIN - Safran	Helmut CIEZKI - DLR	Nathalie GIRARD - CNES	
11:00	1 030 - Virtual Sensing for Fault Detection within the LUMEN Fuel Turbopump Test Campaign Eldin KURUDZIJA - German Aerospace Center (DLR) - Germany	378 - Simulation of an Aerospike Nozzle Performance under an Altitude Chamber Operating Conditions Juan Sebastian SERRATO ORTIZ - RMIT University - Australia	613 - Water Flow Testing a Pintle Injector for 6kN Lunar Descent Engine Preetham MADDALI VENKATA LAKSHMI - Nammo Raufoss AS - Norway	039 - Exploring the Sustainability of Pulsed Detonation in Hydrogen-Air and Hydrogen-Oxygen Mixtures Andrei COJOCEA - NRD - COMOTI - Romania	142 - The Orion-ESM propulsion system: About Artemis I performance and future evolutions Jan-Hendrik MEISS - Airbus Defence and Space - Germany	090 - Design, Manufacture and Characterisation of an Electric Propulsion Thruster for Space, Low Earth Orbit, Very Low Earth Orbit, and Terrestrial Applications. Guy PETERS - Quanta Engineering Ltd - United Kingdom	027 - Investigation of the correlation between microwave coupling and thrust on the example of two thruster concepts Clara SCHAEFER - German Aerospace Center (DLR) - Germany	413 - Development of ILT-1 up to TRL7: 1N Monopropellant Thruster Using 98% Hydrogen Peroxide Adrian PARZYBUT - Lukaszewicz Research Network - Institute of Aviation - Poland	133 - Development and Roadmap of the Ouroboros Programme Hybrid Autophage Propulsion System for Rapid Low-Earth Orbit Access Krzysztof BZDYK - University of Glasgow - United Kingdom	
11:20	2 300 - LUMEN: Validation of a Thermal Model for the LUMEN Oxygen Turbopump Max Axel MÜLLER - German Aerospace Center (DLR) - Germany	533 - Interactions Between Shock Waves and a Secondary Jet on a Truncated Aerospike with Varying Truncation Radii Andrew WILSON - University of Glasgow - United Kingdom	455 - Hot gas tests of a Laser Powder Bed Fusion manufactured 25 kN LOX/LNG regeneratively cooled thrust chamber produced from CuCrZr- copper alloy Jan HAEMISCH - Institute of Space Propulsion, German Aerospace Center - Germany	214 - Design and Testing of a hydrogen-oxygen Predetonator for Rotating Detonation Engines Wolfgang ARMBRUSTER - German Aerospace Center (DLR) - Germany	382 - Artemis I Orion ESM Propulsion System Engine Performance Stephen BARSÌ - NASA - United States	191 - TETRA propulsion module coupling test Stanislav TOLOK - Thales Alenia Space UK - United Kingdom	235 - Characterization of an RF-neutralizer for air-breathing electric propulsion Jana ZORN - Justus-Liebig-University Giessen - Germany	451 - Topology Optimization for ECAPS HPGP Thrusters Olle WAHLQUIST - ECAPS AB - Sweden	255 - Towards the development of Ambre: the first hybrid autophage engine Martin GROS - ALPHA IMPULSION - France	
11:40	3 450 - Influence of the structural damping on the stability of a labyrinth gas seal Yvon BRIEND - ArianeGroup - France	540 - Aerospike Performance Evaluation at Different Ambient Pressures Fabrizio PONTI - University of Bologna - Italy	428 - Experimental study of chamber pressurization or depressurization with LN2: flow visualization, pressure and temperature measurements Maria Teresa SCELZO - von Karman Institute for Fluid Dynamics - Belgium	488 - A State-of-the-Art Analysis of Rotating Detonation Combustion (RDC) for Rocket Engine Applications Florian DITSCHÉ - TUD Dresden University of Technology - Germany	381 - Overview and Assessment of the ESM Pressure Control Performance on Artemis I Stephen BARSÌ - NASA - United States	046 - Digital twins for a 21st-century transformation of Electric Propulsion sector: Vision 2030 Farbod FARAJI - Imperial College London - United Kingdom	244 - Overview of Activities at the Space Electronics Research Group in Giessen Luca HENRICH - University of Applied Sciences - Germany	563 - ECAPS – 1 N and 5 N HPGP thruster development and testing. Wilhelm DINGERTZ - ECAPS AB - Sweden	421 - Towards Greener Propulsion: A Roadmap for Environmental Categorization of Liquid In-Space Propulsion Systems via Life Cycle Analysis Lily BLONDEL-CANEPARI - Università di Pisa - Italy	
12:00	4 625 - Stator-Rotor Performance Optimization Methodology For Full Impulse Partial Admission Supersonic Turbine Design Robson HAHN - German Aerospace Center (DLR) - Germany	570 - Module performance and heat transfer analysis of a clustered annular aerospike nozzle Vincenzo BARBATO - Sapienza University of Rome - Italy	304 - Experimental Analysis of a Capacitively Cooled, Low-Pressure GCH4/GOX Combustion Chamber Rahand DALSHAD - Technische Universität München - Germany	285 - Experimental study and data analysis methods of a subscale Rotating Detonation Engine fed with gaseous H2-O2 Ewen BARD - ONERA - France	146 - ArianeGroup Contribution to the ARTEMIS / ORION European Service Module Propulsion System Michael BIEHLER - ArianeGroup GmbH - Germany	061 - Technical advancements at Imperial Plasma Propulsion Laboratory on the building blocks of digital twin technology for Electric Propulsion Farbod FARAJI - Imperial College London - United Kingdom	290 - Development of RF Plasma Thruster for Space Enabling Technologies at DLR Yung-An CHAN - German Aerospace Center (DLR) - Germany	292 - Preliminary Results of an Ignition and Combustion Test Series with a Nitromethane-based Green Monopropellant Maxim KURILOV - DLR - Germany	192 - Use of the Earth Atmosphere Remnants as Electric Thruster Propellant in ISRU Technology Konstantinos KATSONIS - DEDALOS Ltd - Greece	
12:20	5 035 - Machine Learning Applied to Turbine Inlet Manifold Instrumentation Sarah KRAMER - ArianeGroup GmbH - Germany	610 - Hot-Fire Test Results of a 6kN H2O2/Kerosene annular Aerospike Thrust Chamber Demonstrator Adheena GANA JOSEPH - Technische Universität Dresden - Germany	198 - Experimental characterization of heat transfer and flow boiling in a rectangular minichannel Maria Teresa SCELZO - von Karman Institute for Fluid Dynamics - Belgium	302 - Serial Propellant Tank Pressure Behavior in Artemis I Orion-ESM Propulsion System Michael COOPER - NASA - United States	269 - Applicability of an Electric Pump-fed Cycle Engine for Satellite Thruster Junghun SON - Chungnam National University - South Korea	153 - Numerical simulation of a low-pressure electrodeless ion source intended for air-breathing electric propulsion Marek STASTNÝ - PlasmaSolve s.r.o. - Czech Republic	604 - Nitrous oxide monopropellant thrusters, Reloaded. Baker ADAM - Rocket Engineering Ltd - United Kingdom	663 - In-Situ Propellants using Hybrid Rockets for Mars Sample Return Missions Ozan KARA - Technology Innovation Institute - United Arab Emirates		
12:40	LUNCH									

EXHIBITION

14:00		PLENARY ROUND TABLE #5 : Green advanced propellants – How can they get quicker into service? Moderator : Helmut CIEZKI - DLR, Institute of Space Propulsion Robert-Jan KOOPMANS, Bradford Space - Ulrich GOTZIG, ArianeGroup - Ferran VALENCIA BEL, ESA-ESTEC - Christian PARAVAN, Politecnico di Milano - Adam OKNINSKI, Łukasiewicz Institute of Aviation									
		SESSION 91 Propulsion Systems with Electrical pumps	SESSION 92 Nozzle	SESSION 93 Propellant feed system & tanks	SESSION 94 Detonation Engines 2	SESSION 95 Plasma & Thruster Modelling	SESSION 96 Testing of Chemical Thrusters with Green Propellants	SESSION 97 Propellant Tanks	SESSION 98 Refuelling	SESSION 99 Chemical Propulsion for Cargo & Exploration Missions	
Chair		Gilles VIGIER - 3AF	Lilian PREVOST - CNES	Emilio R GORDON - SWRI	Gerard ORDONNEAU - ONERA	Bayrem ZITOUNI - OHB	Bastien HÄMMERLI - Nammo	Kate UNDERHILL - ESA	Markus PEUKERT - OHB	Stephen GOODBURN - AIRBUS	
15:10	1	331 - Design and Investigation of a low specific electric centrifugal Pump for Orbital Refilling Applications Lorenz PAK - DeltaVision GmbH - Germany	196 - Experimental Study on the Effect of Chevrons on Flow Separation in Rocket Nozzles Ralf STARK - German Aerospace Center (DLR) - Germany	560 - Model-based analysis of heat and mass transfer in cryogenic storage measurements Pedro Afonso MARQUES - von Karman Institute for Fluid Dynamics - Belgium	246 - Research on Regenerative Cooling System of the Rocket Rotating Detonation Engine Michal KAWALEC - Łukasiewicz Research Network - Institute of Aviation - Poland	044 - Numerical simulation model for designing prototypes of PETRUS Velin YORDANOV - Institute of Space Systems, University of Stuttgart (IRS) - Germany	341 - Performance testing of 1N hydrogen peroxide thruster at fotec propulsion test facilities Matteo PESSINA - FOTEC GmbH - Austria	148 - Qualification of demisable Propellant Tank DT-180 Mohamad EL ATRACH - ArianeGroup GmbH - Germany	457 - Development Testing and Analysis of the Integrated Gateway-ESPRIT Bipropellant Refuelling System Andrew HUGHES - Thales Alenia Space - United Kingdom	099 - System Firing Test for the Propulsion System for the MMX Program Takuma KATO - IHI Aerospace - Japan	
15:30	2	368 - Design and development of pumps for an electrical-pump fed engine Leonard BONGIOVANNI - EPFL Rocket Team - Switzerland	328 - Expansion-Deflection Nozzle Design and Performance Optimization for Upper-Stage Applications Felix WEBER - Sapienza University of Rome - Italy	584 - Thermal and functional technologies for the next generation reusable launchers LOX/LCH4 cryogenic tanks Sébastien BIANCHI - Air Liquide Advanced Technologies - France	268 - Experimental Study of a Hollow Small-Scale Rotating Detonation Combustor at TU Darmstadt Yonghun LEE - TU Darmstadt - Germany	636 - DSMC modelling of the neutral flow through a hollow cathode Stephen GABRIEL - University of Southampton - United Kingdom	489 - Test results of a film cooled 200 N hypergolic green propellant thruster using hydrogen peroxide as coolant Philipp TEUFFEL - German Aerospace Center (DLR) - Germany	225 - Overview of LMO Propellant Tank Product Range Marcos PEREZ - LMO - United Kingdom	186 - Fluidic Testing of an In-Orbit Monopropellant Refuelling System Isheeta RANADE - Thales Alenia Space - United Kingdom	355 - The Propulsion Subsystem of the Starlab Commercial Space Station – Building up on Experience from Orion-ESM Development and Qualification Markus JÄGER - Airbus Defence and Space - Germany	
15:50	3	537 - The Development of E-pump Prototypes for Next-Generation Space Turbomachinery Dario Alessandro BRUNA - DBSpace S.r.l. - Italy	349 - Investigations on the influence of shock structure on shear layer unsteadiness in a contoured dual throat nozzle system Abhilash NARAYAN - Liquid Propulsion Systems Centre - India	360 - Braided Bellow Stiffness Modelling Pierre-Loup SCHAEFER - ArianeGroup - France	603 - A numerical investigation of the Richtmyer-Meshkov instability in a planar and convergent geometry Christopher SCHOLES - University of Glasgow - United Kingdom		224 - Qualification Results of a Green Chemical Propulsion Subsystem for 12U Cubesat Missions Marcos PEREZ - LMO - United Kingdom	569 - Towards environmentally benign propellant tank manufacturing Samrudhha KOKARE - NOVA University Lisbon - Portugal	626 - Orbit Fab Refuelling Interface Development Activities in Europe Sebastian HILL - Orbit Fab Ltd - United Kingdom	463 - NASA Marshall Space Flight Center In-Space Cryogenic Propulsion Capabilities and Applications to Human Exploration Thomas BROWN - NASA Marshall Space Flight Center - United States	
16:10	4	600 - Design, development, and tests of the E-Pumps for the RELIANCE engine Jiri KOZAK - Inpraise systems - Czech Republic	576 - Numerical Analysis of Methane-Oxygen Liquid Rocket Engine Nozzle Performance with Finite-Rate Chemical Kinetics Marco GROSSI - Sapienza University of Rome - Italy					238 - Fracture Mechanics Testing of Titanium 6Al-4V in LMP-103S Propellant Henry MULKEY - NASA GSFC - United States			
16:30		COFFEE BREAK									
16:50		PHD AWARDS & KEYNOTE SPEECH #6: Closing Keynote Alberto GARBAYO, Helmut CIEZKI									
17:30		END OF DAY 4									

EXHIBITION



Association Aéronautique
et Astronautique de France

9TH EDITION OF THE SPACE
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FRIDAY 24 MAY 2024 // DAY 5

09:30

TECHNICAL VISITS

Pre-registration online is mandatory

TECHNICAL VISIT #1 – Visit to Skyrora’s Launch Vehicle Manufacturing Facility

TECHNICAL VISIT #2 – AAC CLYDE SPACE Visit

TECHNICAL VISIT #3 – Alba Orbital Visit

12:30

END OF SP2024 CONFERENCE