

Program (Status as of 07.06.2021)

ICISS on Near-Wall Reactive Flows Virtual Summer School - June 7th-10th, 2021

Day 1 - June 7th (Monday)

Time	Chemistry - Q/A-Sessions with	
13:00-14:00	Tutorial 1: Introduction to Chemical Kinetics	K. Kohse-Höinghaus, Germany
13:00-14:00	Lecture 1.1: Chemical Kinetics under low Temperature Conditions	T. Faravelli, Italy
13:00-14:00	Lecture 1.2: Heterogeneous Chemical Kinetics	O. Deutschmann, Germany
13:00-14:00	Tutorial 2: Numerical Combustion Modelling and Simulation	T. Poinso, France

Time	Research Pitch	surname	first name	university	country
14:00 - 14:10	Turbulent flame-wall interactions of premixed flames using Quadrature-based Moment Methods (QbMM)	Steinhausen	Matthias	TU Darmstadt	Germany
14:10 - 14:20	Development of chemical kinetic model used for liquid-phase oxidation of fuel	Le	Minh Duy	Université de Lorraine	France
14:20 - 14:30	Automated Kinetic Model generation and Refinement	Grinberg Dana	Alon	Technion - Israel Institute of Technology	Israel
14:30 - 14:40	Investigation of Dimethyl Ether Pyrolysis in a Single Pulse Shock Tube using Gas Chromatography/Mass Spectrometry	Lindner	Fabian	University of Stuttgart	Germany
14:40 - 14:50	Direct Reduction of Iron Oxides for Steel Production	Fradet	Quentin	German Aerospace Center (DLR)	Germany

Time	Poster Session	surname	first name	university	country	session
15:00-16:00	Study of MILD combustion with Coanda jet attachment to burner wall	Agha Beige	Amir	Sharif University of Technology	Iran	1a
15:00-16:00	Numerical investigation of Gas-phase aluminum acetylacetonate decomposition as a precursor of CVD process	Baik	Seung-Jin	Universität Duisburg-Essen	Germany	1a
15:00-16:00	LES simulation of H ₂ -air combustion with NO _x	Capurso	Tommaso	CERFACS	France	1a
15:00-16:00	Assessment of Optimal Reaction Progress Variable Characteristics for Partially Premixed Flames	Chitgarha	Fatemeh	Tarbiat Modares University	Iran	1a
15:00-16:00	Investigation of Thermal Parameters in a Flat Flame Burner Using Emission Spectroscopy	Eskandari	Fateme	Tarbiat Modares University	Iran	1a
15:00-16:00	Pressure evolution during confined deflagration of fuel-oxidizer mixtures	Giurcan	Venera	Ilie Murgulescu Institute of Physical Chemistry	Romania	1a
15:00-16:00	Comparative investigation of butanol isomer/diesel blends using constant volume combustion chamber	Han	Jinlin	Eindhoven University of Technology	Netherlands	1a
15:00-16:00	Kinetic modeling and simulation of high-temperature by-product formation from urea decomposition	Kuntz	Christian	Karlsruhe Institute of Technology	Germany	1a
15:00-16:00	Risk analysis of thermal decomposition of some energetic compounds using thermal analysis methods	Musuc	Adina Magdalena	Romanian Academy	Romania	1a
15:00-16:00	Compact, global-skeletal reaction mechanisms for combustion of xylene/air and n-butanol/air	Nanjaiah	Monika	University of Duisburg-Essen	Germany	1b
15:00-16:00	Numerical Investigation of Wankel Rotary Engine	Pisnoy	Shimon	Technion – Israel Institute of Technology	Israel	1b
15:00-16:00	Formation of NO _x and Formaldehyde in Oxymethylene Ether/n-Heptane Combustion: Engine Studies and Kinetic Modeling	Poschen	Felix	Karlsruhe Institute of Technology (KIT)	Germany	1b
15:00-16:00	Insights into the Mechanism of Combustion Synthesis of Iron Oxide Nanoparticles Gained by Laser Diagnostics, Mass Spectrometry, and Numerical	Rahinov	Igor	The Open University of Israel	Israel	1b
15:00-16:00	Numerical and experimental investigations on stability and emission behaviour of partially premixed hydrogen burners	Schmidt	Nikolas	Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)	Germany	1b
15:00-16:00	Deposit formation of AdBlue on surfaces of different wettability	Schumacher	Olaf	TU Darmstadt	Germany	1b
15:00-16:00	Model reduction for reaction-transport-systems in the exhaust gas system	Stein	Marcus	Karlsruhe Institute of Technology	Germany	1b
15:00-16:00	Structure-activity relationship and reaction mechanisms for future fuel components: Dialkyl ethers, oxymethylene ethers, and furanes	Werner	Fabienne	Universität Stuttgart	Germany	1b

16:00 - 16:30 **Networking - matching with a new participant every 3 minutes**

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Day 2 - June 8th (Tuesday)

Time	Modelling and Simulation - Q/A-Sessions with	
13:00-14:00	Lecture 1.3: Reduction of Chemical Mechanisms	U. Maas, Germany
13:00-14:00	Lecture 2.1: Modelling and Simulation of Near-Wall Reactive Flows – Part I	C. Frouzakis, Switzerland
13:00-14:00	Lecture 3.2: Near-Wall Measurements in IC engines	B. Böhm, Germany
13:00-14:00	Lecture 2.3: Modelling Turbulence and Transport Phenomena in Wall-bounded Flows of Industrial Relevance	K. Hanjalić, The Netherlands

Time	Research Pitch	surname	first name	university	country
14:00 - 14:10	Effects of flame configuration on flame-wall interaction in fully developed turbulent boundary layers	Ghai	Sanjeev Kumar	Newcastle University	United Kingdom
14:10 - 14:20	Impact of detailed diffusion models on NOx production in NH3/H2/air turbulent flames using Direct Numerical Simulations	Chi	Cheng	University of Magdeburg	Germany
14:20 - 14:30	Direct Numerical Simulation of Flame-Wall Interaction in Gas Turbine Relevant Conditions	Niemietz	Kai	RWTH Aachen University	Germany
14:30 - 14:40	Direct numerical simulation of flame-wall interaction and flame-cooling air interaction	Gupta	Shreshtha	The University of Melbourne	Australia
14:40 - 14:50	Using the Thickened Flame Model for FWI in a turbulent channel flow	Chemak	Mohamed Amine	IFPEN	France
14:50 - 15:00	Near wall modeling of reactive mixtures for wall heat flux prediction in Liquid Rocket Engines	Indelicato	Giuseppe	Sapienza University of Rome	Italy

Time	Poster Session	surname	first name	university	country	session
15:00-16:00	Numerical Assessment of the Gasoline Direct Injection Process using SprayG Data	Abboud	Rami	UPV Universitat Politècnica de València	Spain	2a
15:00-16:00	Multi-stage chemical reduction technique and application to turbulent reactive flows simulation	Bomba	Valentin	University of Maroua	Cameroon	2a
15:00-16:00	Impact of droplets on solid and liquid surfaces	Che	Zhizhao	Tianjin University	China	2a
15:00-16:00	A deep-learning approach for turbulent combustion modelling of hydrogen-air flames	Coulon	Victor	CERFACS	France	2a
15:00-16:00	High resolution flow velocimetry based on phosphor streaks	Fan	Luming	National Research Council Canada	Canada	2a
15:00-16:00	CFD Modelling of Combustion of Solid Mateirals	Farid	Muhammad Usman	University of Agriculture, Faisalabad	Pakistan	2a
15:00-16:00	A numerical investigation of flow field in a hydrogen jet flame burner configuration	Farisco	Federica	Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)	Germany	2a
15:00-16:00	Fiber laser PIV: Compact systems for ultra-high-speed diagnostics of turbulent flows	Geschwindner	Christopher	Technische Universität Darmstadt	Germany	2a
15:00-16:00	Alternative Fuels for Low Temperature Combustion Engine Application	Gupta	Saurabh Kumar	Engineering Research center, Tata Motors	India	2a
15:00-16:00	Distributed combustion	Kardos	Réka Anna	Budapest University of Technology and Economics	Hungary	2a
15:00-16:00	Adaption of Carbon-Free Fuels to High Temperature Industrial Processes	Kiani	Mehrdad	University of Tehran	Iran	2a
15:00-16:00	REDIM reduced Kinetics for Flame-Wall-Interactions of premixed DMC-Air Systems	Li	Peng	Karlsruher Institut für Technologie	Germany	2b
15:00-16:00	A detailed mechanism to study the effects of nanosecond pulsed discharge plasma conditions on methane/air combustion	Mehdi	Ghazanfar	University of Salento	Italy	2b
15:00-16:00	DDT in a smooth tube	Meziat Ramirez	Francis Adrian	CERFACS	France	2b
15:00-16:00	Ignition characteristics for propane-air-additive mixtures	Movileanu	Codina	Ilie Murgulescu Institute of Physical Chemistry	Romania	2b
15:00-16:00	Thermal investigation on the transient flame-wall interaction	Nolte	Adrian	RWTH Aachen University	Germany	2b
15:00-16:00	Pool Boiled Gas Turbine Combustors for Low Boiling Point Green Fuels like Ethanol	Poonawala	Taha	Sardar Vallabhbhai National Institute of Technology Surat	India	2b
15:00-16:00	Model development for iron aerosol combustion: from single particles to industrial burners	Ramaekers	Wilhelmus	Eindhoven University of Technology	The Netherlands	2b
15:00-16:00	Product Studies of HNC0 Reactions under Exhaust Gas Conditions	Treffehn	Patrick	Karlsruhe Institute of Technology	Germany	2b
15:00-16:00	Simulation of flow over irregular roughness	Yang	Jiasheng	KIT	Germany	2b

16:00 - 16:30 **Networking - matching with a new participant every 3 minutes**

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Day 3 - June 9th (Wednesday)

Time	Experiments and Diagnostics - Q/A-Sessions with	
13:00-14:00	Tutorial 3: Laser Diagnostics Near Walls	A. Dreizler, Germany
13:00-14:00	Lecture 3.1: Multiscalar Laser Diagnostics	R. Barlow, USA
13:00-14:00	Lecture 2.2: Modelling and Simulation of Near-Wall Reactive Flows – Part II	C. Hasse, Germany
13:00-14:00	Lecture 3.3: Solar Fuels and New IC engine Concepts	M. Wooldridge, USA

Time	Research Pitch	surname	first name	university	country
14:00 - 14:10	1-d HRCARS and phosphor thermometry to study unsteady thermal boundary layer development with a transient pressure-temperature environment	Escofet-Martin	David	The University of Edinburgh	United Kingdom
14:10 - 14:20	Investigation of flame attachment to the burner head in a double swirl gas turbine model combustor	Mardani	Amir	Sharif university Of Technology	Iran
14:20 - 14:30	Influence of hydrogen and oxygen ratio on the extinction and the speed of premixed/nonpremixed flames	Eckart	Sven	TU Bergakademie Freiberg	Germany
14:30 - 14:40	Study of flame-wall interaction: influence of effusion cooling on pollutant emissions.	Milu-Vaidesegan	Sebastian	Université de Toulouse	France
14:40 - 14:50	Temperature measurements at the surface of reacting large-diameter coke particles	Khodsiani	Mohammadhassan	Otto-von-Guericke University of Magdeburg	Germany
14:50 - 15:00	Investigation of near-wall energy processes with laser-based diagnostics	Xavier	Pradip	INSA Rouen Normandie	France

Time	Poster Session	surname	first name	university	country	session
15:00-16:00	Experimental Study of Water Droplet Impact on Burning Wood Surfaces	Albadi	Ahmed	University of Sheffield	United Kingdom	3a
15:00-16:00	Thermal decomposition kinetics of two Chilean wildland fuels	Arriagada Romero	Andrés	Universidad Técnica Federico Santa María	Chile	3a
15:00-16:00	Local combustion modes in a cavity-based scramjet	Cao	Donggang	Technion-Israel Institute of Technology	Israel	3a
15:00-16:00	Ignition calculations in a closed chamber with detailed chemistry under different turbulent conditions	Crespo Anadon	Javier	INP Toulouse CERFACS	France	3a
15:00-16:00	Numerical Investigations on Flashback Limits of Premixed Methane-Hydrogen-Air Laminar Flames	Güleriyüz	Dilay	Middle East Technical University	Turkey	3a
15:00-16:00	Mixture Temperature-Controlled combustion, statistical analysis of sprays	Józsa	Viktor	Budapest University of Technology and Economics	Hungary	3a
15:00-16:00	Characterization of premixed combustion of NH ₃ /CH ₄ mixture	Kohansal	MohammadReza	University of Tehran	Iran	3a
15:00-16:00	Performance evaluation of Combustor of Gas turbine engine	Kulshreshtha	Digvijay	Gujarat Technological University	India	3a
15:00-16:00	Intracavity Laser Absorption Spectroscopy Diagnostics of Gas-phase FeO Absorption Cross Section in a Shock Tube	Lalanne	Matthieu	The Open University of Israel	Israel	3a
15:00-16:00	Modeling of AdBlue Film Formation, Reaction Kinetics and Deposit Formation in Diesel DeNOx SCR System	Nishad	Kaushal	Technische Universität Darmstadt	Germany	3b
15:00-16:00	Surface thermometry and flame front imaging in the crevice of a fixed-volume chamber	Ojo	Anthony	University of Edinburgh	United Kingdom	3b
15:00-16:00	LES simulation of near-wall flow in motored condition of the Darmstadt Engine	Pati	Andrea	TU Darmstadt	Germany	3b
15:00-16:00	Large eddy simulations and grid study of the supercritical and transcritical jet flows	Rahantamalisoa	Faniry	Università degli Studi di Perugia	Italy	3b
15:00-16:00	Experimental investigation of the interaction between scalar transport and turbulence close to walls	Schulz	Sebastian	KIT	Germany	3b
15:00-16:00	Turbulent flame-wall interaction of premixed flames using Quadrature-based Momentum Methods (QMOM) and tabulated chemistry	Steinhausen	Matthias	Technical University of Darmstadt	Germany	3b
15:00-16:00	Oxidative and pyrolytic reactions of dimethyl carbonate: Shock-tube studies and kinetic modeling	Wenz	Johannes	Karlsruher Institut für Technologie	Germany	3b
15:00-16:00	Thermal Burner Characterization Aimed at fuel consumption and Pollutants Reduction	Zabetian	Mohammad	Tarbiat Modares University	Iran	3b
15:00-16:00	Comparison of methane combustion mechanisms based on large amount of species concentration measurements	Zhang	Peng	Eötvös Loránd University	Hungary	3b

16:00 - 16:30 **Networking - matching with a new participant every 3 minutes**

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Day 4 - June 10th (Thursday)

Time **Multiphase flows, rough surfaces and industrial perspectives - Q/A-Sessions with**

13:00-14:00	Tutorial 4: Drop and Spray Impact on Films and Surfaces	C. Tropea, Germany
13:00-14:00	Lecture 4.1: Flows over Rough Surfaces	B. Frohnappel, Germany
13:00-14:00	Lecture 4.2: Catalytic Reactors from a Combustion Kinetics Perspective: The Example of Industrial Catalytic Ammonia Oxidation	M. Votsmeier, Germany
13:00-14:00	Lecture 4.3: Near-Wall-Effects in Fuel Injection	P. Leick, Germany

Time **Research Pitch** **surname** **first name** **university** **country**

14:00 - 14:10	Numerical Simulation of the evaporation process of pinned urea-water droplets in cavities	Mildenberger	Moritz	TU Darmstadt	Germany
14:10 - 14:20	Direct numerical simulation of reactive heat transfer (dimer-monomer) in channel flow	Zhang	Kai	KTH Royal Institute of Technology	Sweden
14:20 - 14:30	The impact of single drop on a thin liquid film	Bagheri	Milad	Technische Universität Darmstadt	Germany
14:30 - 14:40	CH ₄ /NH ₃ /H ₂ Blends for Future Green Power Generation	Mashruk	Syed	Cardiff University	United Kingdom
14:40 - 14:50	Impact of hydrogen addition on swirling flames: flame structure, stabilization mechanisms and instabilities	Laera	Davide	Cerfacs	France

Time **Poster Session** **surname** **first name** **university** **country** **session**

15:00-16:00	Effects of adding various carbon nanotube concentrations and increasing C/H mass ratio of liquid fuels on combustion behavior and flame thermal radiation	Boghrti	Mehdi	Bozorgmehr University of Qaenat	Iran	4a
15:00-16:00	Reacting flow near cool walls	Celik	Hasan	Aalto University	Finland	4a
15:00-16:00	Spatially resolved profiles within an SCR catalyst	Eck	Mario	Karlsruhe Institute of Technology	Germany	4a
15:00-16:00	Simulations of streamer assisted ignition	Hazenberg	Thijs	Eindhoven University of Technology	Netherlands	4a
15:00-16:00	Trapped-vortex concepts in the context of lean premixed technology	Kruljevic	Boris	TU Delft	Netherlands	4a
15:00-16:00	Spray-Wall-Interaction in the cylinder of a highly charged internal combustion engine	Maliha	Malki	Karlsruher Institut für Technologie (KIT)	Germany	4a
15:00-16:00	Extension of the Spectral Difference method to combustion	Marchal	Thomas	INP Toulouse	France	4a
15:00-16:00	Pressure and temperature dependence of propagation velocity of stoichiometric propane-air-inert mixtures	Mitu	Maria	Ilie Murgulescu Institute of Physical Chemistry	Romania	4a
15:00-16:00	Numerical investigation of firepower-emissions dependence in a biomass combustion-induced flow	Mulenda	Lomena	Université de Kinshasa (UNIKIN)	Dem. Rep. of the Congo	4a
15:00-16:00	Numerical investigation of the correlation between auto-ignition delays and the methane number of liquefied natural gas (LNG)	Nadiri	Solmaz	Technische Universität Braunschweig	Germany	4b
15:00-16:00	Pattern formation in binary droplet spreading on smooth substrates	Othman	Ahmed	University of Cambridge	United Kingdom	4b
15:00-16:00	Channel switching in the unimolecular decomposition of dimethoxymethane: a theoretical study	Pazdera	Tobias Manuel	Karlsruhe Institute of Technology	Germany	4b
15:00-16:00	Thermal characterization and heat transfer in Liquid Rocket Engines	Remiddi	Arianna	"La Sapienza" University of Rome	Italy	4b
15:00-16:00	Velocity Boundary Layer Phenomena in an Optically Accessible SI Engine	Schmidt	Marius	TU Darmstadt	Germany	4b
15:00-16:00	DNS of turbulent impinging jets	Secchi	Francesco	Karlsruhe Institute of Technology	Germany	4b
15:00-16:00	Particle emission from direct injection internal combustion engine fed with various gaseous fuels	Thawko	Andy	Technion - Israel Institute of Technology	Israel	4b
15:00-16:00	Conceptual study of an advanced ethanol engine PSA/FAPESP	Um Min Allah	Fazal	University of Campinas	Brazil	4b
15:00-16:00	A reduced mechanism for polygeneration processes with ozone addition	Xie	Wenwen	Karlsruher Institut für Technologie	Germany	4b
15:00-16:00	Numerical Analysis of Biofuel-Air Detonations	Zadok	Naor	Tel Aviv University	Israel	4b
15:00-16:00	Real Gas Flamelet Modeling of Transcritical Reactive Flow	Zeinivand	Hamed	Sharif University of Technology	Iran	4b

16:00 - 16:30 **Networking - matching with a new participant every 3 minutes**