



PROGRAM

WELCOME

The organizing committee wishes to thank you for attending the 40th Meeting of the Italian Section of the Combustion Institute.

The annual ASICI meeting is aimed at giving the opportunity for exchange of expertise and to promote discussion between scientists and technologists working in the field of combustion, in all its fundamental and applied aspects, as well as in neighboring fields (pyrolysis, gasification, fuel processing and upgrading). We hope you will have a productive meeting!

A prize will be given to the best oral presentations delivered by PhD students or young (non-permanent position) researchers during the meeting.

ACKNOWLEDGEMENTS



SAPIENZA
UNIVERSITÀ DI ROMA



Istituto di Ricerche
sulla Combustione



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Dipartimento
di Ingegneria Chimica,
dei Materiali e della
Produzione Industriale
Università degli Studi
di Napoli Federico II

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Session I

PYROLYSIS AND GASIFICATION

Session II

COMBUSTION ENGINES

Session III

LAMINAR AND TURBULENT FLAMES

Session IV

BIOFUELS, BIOCHEMICALS AND BIOREFINERY

Session V

FORMATION AND CONTROL OF POLLUTANTS AND GREENHOUSE GASES

Session VI

REACTION KINETICS

Session VII

SOOT, NANOPARTICLES, PAH AND OTHER LARGE MOLECULES

Session VIII

FIRE AND SAFETY RESEARCH

Session IX

SOLID FUEL COMBUSTION

Session X

NOVEL CONCEPTS, TECHNOLOGIES AND SYSTEMS

Session XI

COMBUSTION INSTABILITY

Wednesday, 7 June 2017		40 th Meeting Italian Section of the Combustion Institute			
9:00-9:45	Registration				
9:45-10:00	Opening				
10:00-11:00	PLENARY LECTURE A SURVEY OF MIXING IN FLUIDIZED BED THERMOCHEMICAL PROCESSING OF BIOMASS <i>Prof. Piero Salatino, Dr. Roberto Solimene</i> <i>Chair: Prof. Fabrizio Scala</i>				
11:00-11:20	Coffee Break				
11:20-13:00	PARALLEL SESSIONS (ORAL PRESENTATIONS)				
	AULA DEL CHIOSTRO PYROLYSIS AND GASIFICATION <i>Chair: TBA</i>			AULA 17 COMBUSTION ENGINES <i>Chair: TBA</i>	
11:20	I1	MULTI-STEP KINETICS OF WOOD PYROLYSIS: ESTIMATION OF REACTION HEATS <i>C. Branca, A. Galgano, C. Di Blasi</i>		II1	ENGINE COMBUSTION ANALYSIS OF IRON NANOPARTICLES <i>C. Beatrice, G. Di Blasio, M. Lazzaro</i>
11:40	I2	PARTICLE-WALL IMPACT EXPERIMENTS FOR ENTRAINED-FLOW COAL GASIFIERS <i>M. Troiano, F. Montagnaro, R. Solimene, P. Salatino</i>		II2	SPRAY CHARACTERIZATION FROM HIGH-PRESSURE OUTWARDLY OPENING HOLLOW CONE INJECTOR <i>A. Montanaro, M. Migliaccio, L. Allocca, V. Fraioli, C. Beatrice</i>
12:00	I3	A MODEL FOR OXY-PYROLYSIS OF SOLID FUELS IN A ROTARY KILN REACTOR <i>C. Tregambi, F. Montagnaro, P. Salatino, R. Solimene</i>		II3	EFFECT OF WATER INJECTION ON PERFORMANCE, GAS EMISSION AND COMBUSTION NOISE OF A 2- CYLINDER TURBOCHARGED SI ENGINE: EXPERIMENTAL AND NUMERICAL ANALYSIS <i>G. Valentino, D. Siano, F. Bozza, L. Marchitto, C. Tornatore</i>
12:20	I4	EFFECTS OF SOFT-SPHERE MODEL PARAMETERS IN THE SIMULATION OF SLAGGING GASIFIERS <i>F.S. Marra, D.M. Balice, F. Montagnaro, G. Tretola, P. Salatino</i>		II4	HIGH PRESSURE METHANE-OXYGEN COMBUSTION KINETIC ANALYSIS <i>G. Saccone, P. Natale, F. Battista</i>
12:40	I5	CHARACTERIZATION OF TAR PRODUCED FROM WALNUT SHELLS PYROLYSIS <i>B. Apicella, O. Senneca, C. Russo, F. Stanzione, A. Ciajolo, A. Wütscher, S. Heuer, V. Scherer</i>		II5	PARTIALLY STRATIFIED COMBUSTION MODELING FOR NATURAL GAS FUELED INTERNAL COMBUSTION ENGINES <i>L. Bartolucci, S. Cordiner, V. Mulone, V. Rocco</i>
13:00-14:30	Lunch Break				
14:30-16:30	ROUND TABLE NEW FRONTIERS IN THE EMISSION CONTROL FOR INTERNAL COMBUSTION ENGINES <i>Chairs: Francesco Di Natale, Carlo Beatrice</i>				
16:30-17:00	Coffee Break				
17:00-20:00	Cultural visit: Expert guides will take all the participants in a tour across Archeological Area				

Thursday, 8 June 2017		40th Meeting Italian Section of the Combustion Institute	
8:30-9:00	Registration		
9:00-10:00	PLENARY LECTURE TOWARDS EXASCALE SIMULATIONS OF TURBULENT COMBUSTION WITH COMPLEX CHEMISTRY <i>Prof. Hong G. Im</i> <i>Chair: Prof. Mauro Valorani</i>		
10:00-11:00	PARALLEL SESSIONS (ORAL PRESENTATIONS)		
	AULA DEL CHIOSTRO LAMINAR AND TURBULENT FLAMES <i>Chair: TBA</i>	AULA 17 BIOFUELS, BIOCHEMICALS AND BIOREFINERY <i>Chair: TBA</i>	

10:00	III1	ANALYSIS OF FLAME SURFACE AND TURBULENCE SCALES IN PREMIXED JET FLAMES AT HIGH REYNOLDS NUMBER <i>A. Attili, S. Luca, F. Bisetti, H. Pitsch</i>	IV1	GREEN SOLVENTS FOR LIGNOCELLULOSE PRETREATMENT AND ENZYMATIC SACCHARIFICATION <i>A. Procentese, M.E. Russo, A. Marzocchella</i>
10:20	III2	NUMERICAL INVESTIGATION OF LARGE SCALE EFFECTS ON TURBULENT PREMIXED FLAMES <i>P.E. Lapenna, R. Lamioni, G. Troiani, F. Creta</i>	IV2	CATALYTIC CONVERSION OF BIO-ETHANOL INTO BUTANOL <i>S. Romanucci, S. Cimino, L. Lisi</i>
10:40	III3	FRONT CURVATURE EVOLUTION AND HYDRODYNAMICS INSTABILITIES <i>G. Pagnini, A. Trucchia</i>	IV3	THIRD GENERATION BIOMASS. CLASSIFICATION AND CHARACTERIZATION OF ALGAE FUELS <i>P.E.A. Debiagi, M. Trinchera, A. Frassoldati, E. Ranzi, T. Faravelli</i>
11:00-11:20	Coffee Break			
11:20-13:00	PARALLEL SESSIONS (ORAL PRESENTATIONS)			
	AULA DEL CHIOSTRO LAMINAR AND TURBULENT FLAMES <i>Chair: TBA</i>		AULA 17 FORMATION AND CONTROL OF POLLUTANTS AND GREENHOUSE GASES <i>Chair: TBA</i>	
11:20	III4	DYNAMICAL SYSTEM ANALYSIS OF A TURBULENT PREMIXED PLANAR HYDROGEN FLAME IN THE CORRUGATED FLAMELETS COMBUSTION REGIME <i>E.-Al. Tingas, R. Malpica Galassi, P.P. Ciottoli, N. Mukhadiyev, H.G. Im, M. Valorani</i>	V1	Hg AND NO _x REMOVAL FROM FLUE GASES BY SUPPORTED MnO _x SORBENTS/CATALYSTS <i>S. Cimino, C. Mangone, F. Scala</i>
11:40	III5	THE ROLE OF TURBULENCE IN DARRIEUS-LANDAU INSTABILITY <i>G. Troiani, F. Creta, P.E. Lapenna, R. Lamioni</i>	V2	FLUE GAS DESULPHURIZATION BY SEAWATER SCRUBBING IN A STRUCTURED PACKING ABSORPTION COLUMN <i>D. Flagiello, F. Di Natale, A. Erto, A. Lancia</i>
12:00	III6	A GENERALIZED TURBULENT COMBUSTION MODEL FOR LARGE EDDY SIMULATION OF TURBULENT PREMIXED FLAMES <i>E. Giacomazzi, D. Cecere, N.M. Arcidiacono, F.R. Picchia</i>	V3	CONDENSATIONAL GROWTH ASSISTED WET SCRUBBING FOR MODEL COMBUSTION PARTICLES REMOVAL <i>F. La Motta, F. Di Natale, C. Carotenuto, A. Lancia</i>
12:20	III7	LES OF SYNGAS/AIR TURBULENT NONPREMIXED JET FLAMES AT HIGH PRESSURE <i>P.P. Ciottolia, B. J. Lee, P.E. Lapenna, R. Malpica Galassi, M. Valorani, H.G. Im</i>	V4	EVALUATION OF KINETIC MODEL FOR THE OXIDATIVE DECOMPOSITION OF H ₂ S <i>G. Pio, D. Barba, E. Salzano, V. Palma</i>
12:40	III8	CHARACTERIZATION OF GAS TURBINE BURNER INSTABILITIES BY WAVELET ANALYSIS OF INFRARED IMAGES <i>C. Allouis, A. Amoresano, G. Langella, V. Niola, G. Quaremba, S. Rizzo</i>	V5	INVESTIGATION ON THE EFFECT OF STEAM ON THE SORBENT PERFORMANCE FOR THE CALCIUM LOOPING PROCESS <i>A. Coppola, F. Montagnaro, F. Scala, P. Salatino</i>
13:00-14:30	Lunch Break			
14:30-15:30	PARALLEL SESSIONS (ORAL PRESENTATIONS)			
	AULA DEL CHIOSTRO REACTION KINETICS <i>Chair: TBA</i>		AULA 17 FORMATION AND CONTROL OF POLLUTANTS AND GREENHOUSE GASES <i>Chair: TBA</i>	

14:30	VI1	EFFECT OF DILUENTS ON METHANE OXIDATION IN A JET STIRRED FLOW REACTOR <i>M. Lubrano Lavadera, P. Sabia, M. de Joannon, T. Faravelli, R. Ragucci</i>	V6	FRACTAL APPROACH FOR THE DESCRIPTION OF LIQUID-PHASE ADSORPTION DYNAMICS: THE CASE STUDY OF THE REUSE OF COAL COMBUSTION ASH AS ADSORBENT <i>M. Balsamo, F. Montagnaro</i>
14:50	VI2	NUMERICAL INVESTIGATION OF IGNITION DELAY TIMES IN A PSR OF GASOLINE FUEL <i>F.S. Marra, L. Acampora, E. Martelli</i>	V7	EFFECT OF MORPHOLOGY OF NANOSTRUCTURED CERIA-BASED CATALYSTS OVER CO, SOOT AND NO OXIDATIONS <i>M. Dosa, M. Piumetti, S. Bensaid, T. Andana, D. Fino, N. Russo</i>
15:10	VI3	A CSP-BASED AUTOMATIC PROCEDURE TO IDENTIFY REACTIONS LEADING TO HYPER-FAST TIMESCALES IN REACTING SYSTEMS <i>R. Malpica Galassi, P.P.Ciottoli, M.Valorani</i>	V8	A CFD-BASED SIMULATION STUDY OF THE REGENERATION DYNAMICS OF A CATALYTIC DIESEL PARTICULATE FILTER <i>V. Di Sarli, A. Di Benedetto</i>
15:30-16:30	WORK-IN-PROGRESS POSTER SESSION			
16:30-17:00	Coffee Break			
17:00-18:00	Members meeting of the Italian Section of the Combustion Institute			
20:00	Social dinner at restaurant PALAZZO BRANCACCIO			

Friday, 9 June 2017		40th Meeting Italian Section of the Combustion Institute			
8:30-9:00		Registration			
9:00-10:00		PLENARY LECTURE TOWARDS FUEL-SWITCHING IN DIESEL ENGINES: HIGH PRESSURE OXIDATION OF SIMPLER HYDROCARBONS AND ALCOHOLS <i>Prof. Peter Glarborg</i> <i>Chair: Prof. Andrea D'Anna</i>			
10:00-11:00		PARALLEL SESSIONS (ORAL PRESENTATIONS)			
	AULA DEL CHIOSTRO SOOT, NANOPARTICLES, PAH AND OTHER LARGE MOLECULES <i>Chair: TBA</i>			AULA 17 FIRE AND SAFETY RESEARCH <i>Chair: TBA</i>	
10:00	VII1	CHEMICAL AND STRUCTURAL PROPERTIES OF SOOT FROM DIVERSE SOURCES <i>C. Russo, B. Apicella, A. Tregrossi, J.S. Lighty, A. Ciajolo</i>		VIII1	COMPARISON BETWEEN A SEMI-EMPIRICAL AND A PHYSICAL MODEL IN PREDICTING LAB-SCALE FIRE RATE OF SPREAD <i>S. Vaccaro, G. Battipaglia</i>
10:20	VII2	RAMAN SPECTROSCOPY AND ATOMIC FORCE MICROSCOPY OF SOOT SAMPLED IN HIGH-PRESSURE DIFFUSION FLAMES <i>G. De Falco, P.H. Joo, M. Commodo, P. Minutolo, A. D'Anna, Ö. L. Gülder</i>		VIII2	EFFECTS OF THE MEAN PARTICLE SIZE ON THE DEFLAGRATION INDEX ESTIMATION FOR CORNSTARCH DUST <i>A. Fumagalli, M. Derudi, R. Rota, S. Copelli</i>
10:40	VII3	SOOT THERMOPHORESIS IN CURVED LAMINAR FLAMES <i>A.E. Saufi, B. Franzelli, A. Cuoci</i>		VIII3	DUST FLAME PROPAGATION IN THE 20 L EXPLOSION VESSEL <i>V. Di Sarli, R. Sanchirico, A. Di Benedetto</i>
11:00-11:20		Coffee Break			
11:20-13:00		PARALLEL SESSIONS (ORAL PRESENTATIONS)			
	AULA DEL CHIOSTRO SOOT, NANOPARTICLES, PAH AND OTHER LARGE MOLECULES <i>Chair: TBA</i>			AULA 17 SOLID FUEL COMBUSTION <i>Chair: TBA</i>	

11:20	VII4	COAGULATION EFFICIENCY OF CORONENE AT FLAME CONDITION USING A MOLECULAR DYNAMICS APPROACH <i>L. Pascazio, M. Sirignano, A. D'Anna</i>	IX1	MODELING OF BIOMASS COMBUSTION ON A RECIPROCATING-GRATE SUPER-HEATER <i>C. Galletti, N. Bitossi, A. Lupi, S. Santilli, M.G. Gallo, F. Sansone, B. Peters</i>
11:40	VII5	DETAILED KINETIC MODELING OF SOOT FORMATION AT LIGHTLY SOOTING CONDITIONS <i>W. Pejpichestakul, A. Frassoldati, A. Parente, T. Faravelli</i>	IX2	NUMERICAL EVALUATION OF PARTICLE STRUCTURE EVOLUTION AND FRAGMENTATION DURING COAL COMBUSTION AT DIFFERENT HEATING RATE <i>O. Senneca, M. Urciuolo, P. Bareschino, G. Diglio, F. Pepe</i>
12:00	VII6	MODELLING EVOLUTION OF PARTICLE SIZE DISTRIBUTION IN PREMIXED FLAMES <i>M. Sirignano, J.H. Kent, A. D'Anna</i>	IX3	VALORIZATION OF SUGAR BEET PULP RESIDUE AS A SOLID FUEL VIA TORREFACTION <i>P. Brachi, E. Riianova, M. Miccio, F. Miccio, G. Ruoppolo, R. Chirone</i>
	AULA DEL CHIOSTRO NOVEL CONCEPTS, TECHNOLOGIES AND SYSTEMS <i>Chair: TBA</i>		AULA 17 COMBUSTION INSTABILITY <i>Chair: TBA</i>	
12:20	X1	EXPERIMENTAL INVESTIGATION OF THE INFLUENCE OF THE THERMAL INTENSITY ON THE PERFORMANCE OF A CYCLONIC BURNER OPERATING IN MILD COMBUSTION CONDITIONS <i>G. Sorrentino, P. Bozza, P. Sabia, M. de Joannon, R. Ragucci</i>	XI1	QUASI-1D ANALYSIS OF MULTIPLE GEOMETRICAL CONFIGURATIONS OF A SINGLE ELEMENT COMBUSTOR <i>M. L. Frezzotti, S. D'Alessandro, C. Huang, F. Nasuti</i>
12:40	X1	HYDROGEN EVOLUTION OVER NANO-CU/TIO2 CATALYST THROUGH PHOTOREFORMING OF ALCOHOLS: A KINETIC INVESTIGATION <i>I. Di Somma, L. Clarizia, D. Russo, R. Andreozzi, R. Marotta</i>	XI2	THERMOCHEMICAL INSTABILITY OF HIGHLY DILUTED METHANE MILD COMBUSTION <i>G. Bagheri, E. Ranzi, M. Lubrano Lavadera, M. Pelucchi, P. Sabia, A. Parente, M. de Joannon, T. Faravelli</i>
13:00-14:30	Lunch Break			
14:30-15:00	Closing remarks and best presentation awards for young researchers			

Oral presentation 15 minutes + 5 minutes discussion time

All the oral presentations should be done in English

Poster size A0 (841mm × 1189mm)