



VII INTERNATIONAL CONGRESS ON COMBUSTION ENGINES

POLISH SCIENTIFIC SOCIETY
OF COMBUSTION ENGINES

27th-29th June 2017

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FINAL PROGRAMME

Poznan University of Technology
60-965 Poznan, Piotrowo 3 Street, POLAND

PTNSS-2017

CONGRESS SCHEDULE

26.06.2017 Monday		27.06.2017 Tuesday		28.06.2017 Wednesday		29.06.2017 Thursday		
		8.00 – 9.00	REGISTRATION Conference Center, Conference Hall	8.00 – 9.00	REGISTRATION Conference Center, Conference Hall	8.00 – 9.00	REGISTRATION Conference Center, Conference Hall	
		9.00 – 9.30	OPENING CEREMONY Conference Center, Congress Room 4	9.00 – 11.00	PLENARY SESSION III Global trends in engine technology II Conference Center, Congress Room 4	9.00 – 11.30	INDUSTRIAL SESSION Conference Center, Congress Room 4	
		9.30 – 12.30	PLENARY SESSION I Global trends in engine technology I Conference Center, Congress Room 4	11.00 – 11.30	Coffee break			
		12.30 – 13.00	Coffee break		TECHNICAL SESSION I Optical research on engine processes Congress Room 8	TECHNICAL SESSION II Emission measurement and aftertreatment Congress Room 9	11.30 – 12.00	CLOSING CEREMONY Conference Center, Congress Room 4
		13.00 – 14.00	PLENARY PANEL DISCUSSION Current and future directions in automotive powertrain development Conference Center, Congress Room 4	11.30 – 14.00			12.00 – 13.00	LUNCH Conference Center
		14.00 – 15.00	LUNCH Conference Center	14.00 – 15.00	LUNCH Conference Center			
		15.00 – 17.30	PLENARY SESSION II DPF retrofitting, motivation & experiences Conference Center, Congress Room 4	15.00 – 17.00	TECHNICAL SESSION III Fuel & alternative powertrain concepts Congress Room 8	TECHNICAL SESSION IV Fuel & powertrain development Congress Room 9		
		17.30 – 18.30	POSTER SESSION I Conference Center, Hall	17.00 – 18.00	POSTER SESSION II Conference Center, Hall			
		18.30 – 19.00	Break	18.00 – 18.30	Break			
				18.30 – 19.00	Transfer to Szreniawa			
16.00	REGISTRATION Conference Center, Conference Hall							
19.00	Welcome Reception Conference Center	19.00 – 24.00	Gala Dinner Conference Center	19.00 – 24.00	Barbecue Szreniawa			

27th June 2017

Dear Friends and Colleagues,



On behalf of Polish Scientific Society of Combustion Engines (PTNSS) it is my pleasure to welcome you to the 7th INTERNATIONAL CONGRESS ON COMBUSTION ENGINES which will be held in Poznan, Poland on the 27th–29th of June 2017 and also it is my great privilege to act as PRESIDENT of the Congress.

I have the honor to offer you an exceptional technical programme including over 200 papers presented by top international experts. The Congress covers a wide range of topics in research fields such as design, manufacture, operation and ecological effects of internal combustion engines in the opinion of specialists from all over the world. The Congress also covers varied applications of combustion engines, including aviation and marine engines. This will be a great meeting, with expert engineers and researchers sharing their new ideas, inventions, and experience.

The attendees will gain knowledge in a wide variety of subjects related to combustion engines and will be able to enjoy, along with friends and family, the hospitality of the city of Poznan. There are plenty of comfortable hotels, restaurants and points of entertainment. The attendees will have the opportunity of visiting the country with a multitude of historical monuments and religious sites.

I hope you will enjoy the Congress while meeting old friends and making new ones.

Yours sincerely,

Prof. Jerzy Merkisz

A handwritten signature in black ink, consisting of stylized, cursive letters that appear to be 'J. Merkisz'.

*President of PTNSS
President of 2017 PTNSS Congress*

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SESSIONS SCHEDULE

Tuesday – 27th June 2017

9.00 – 9.30 Opening Ceremony Conference Center, Congress Room 4

9.30 – 12.30 Plenary Session I Conference Center, Congress Room 4
Global trends in engine technology I

Chairman: Kurt ENGELJEHRINGER, Austria; Prof. Andrzej TEODORCZYK, Poland

Timothy JOHNSON
Corning, USA

INVITED KEYNOTE SPEAKER
 PTNSS-2017-036
VEHICULAR EMISSIONS IN REVIEW

Piotr BIELACZYC
*BOSMAL Automotive R&D Institute Ltd,
 Poland*

PTNSS-2017-037
**GLOBAL POWERTRAIN TRENDS FOR LDV IN LIGHT
 OF ACCELERATING CHANGES IN EMISSION RULES
 AND TEST METHODS**

Hubert FRIEDL
Gunter FRAIDL
Paul KAPUS
C. MARTIN
AVL List GmbH, Austria

PTNSS-2017-038
**TRENDS IN GASOLINE ENGINE TECHNOLOGY FOR
 HIGH PERFORMANCE AND LOW EMISSION**

Hideaki MIZUNO
Nissan, Japan

CE-2017-225
**NISSAN GASOLINE ENGINE STRATEGY FOR HIGHER
 THERMAL EFFICIENCY**

Yuzo AOYAGI
*Okayama University
 New A.C.E. Institute Co., Ltd., Japan*

CE-2017-401
**IMPROVEMENT OF BSFC AND EFFECTIVE NO_x AND PM
 REDUCTION BY HIGH EGR RATES IN HEAVY DUTY
 DIESEL ENGINE**

12.30 – 13.00 Coffee Break

13.00 – 14.00 Plenary Panel Discussion Conference Center, Congress Room 4
Current and future directions in automotive powertrain development

Organizer and Moderator: Dr Piotr BIELACZYC, Poland; Secretary: Joseph WOODBURN, Poland

Yuzo AOYAGI
*Okayama University
 New A.C.E. Institute Co., Ltd., Japan*

Hubert FRIEDL
AVL List GmbH, Austria

Timothy JOHNSON
Corning, USA

Christopher KOLODZIEJ
Argonne National Laboratory, USA

Andreas KRACKE
Volkswagen, Germany

14.00 – 15.00 Lunch

Conference Center

**15.00 – 17.30 Plenary Session II Conference Center, Congress Room 4
DPF retrofitting, motivation & experiences**

Chairman: Prof. Jan CZERWIŃSKI, Switzerland (Session Organizer); Prof. Jerzy MERKISZ, Poland

<p>Leonid TARTAKOVSKY Rafael FLEISCHMAN <i>Technion – Israel Institute of Technology, Israel</i></p>	<p><i>INVITED KEYNOTE SPEAKER</i> CE-2017-330 DPF RETROFIT PROGRAM IN ISRAEL – EFFECTS OF DIESEL PARTICLE FILTERS ON PERFORMANCE OF IN-USE BUSES</p>
<p>Peter GEHR <i>Faculty of Medicine, University of Bern, Switzerland</i></p>	<p>PTNSS-2017-039 HEALTH EFFECTS OF COMBUSTION GENERATED ULTRAFINE PARTICLES (UFP): HOW UFP CAN ENTER THE HUMAN ORGANISM – SIZE MATTERS</p>
<p>Andreas MAYER <i>VERT Scientific Committee, TTM Niederrohrdorf, Switzerland</i></p>	<p>PTNSS-2017-040 PHYSICAL & CHEMICAL CONSIDERATIONS OF ATMOSPHERIC POLLUTION BY ULTRAFINE PARTICLES</p>
<p>Volker HENSEL <i>Aurigna Consulting, Germany</i></p>	<p>PTNSS-2017-041 WORLDWIDE VERT ACTIVITIES AND EXPERIENCE WITH DPF RETROFITTING</p>
<p>Thomas LUTZ <i>ETH – Swiss Federal Institute of Technology, Zurich, Switzerland</i></p>	<p>PTNSS-2017-042 AFTERTREATMENT WITH DPF, INSPECTION & MAINTENANCE, THE POLICY</p>
<p>Thomas KRINKE, Oliver F. BISCHOF <i>European Sales Manager, TSI Inc., Germany</i></p>	<p>PTNSS-2017-043 RECENT ADVANCES IN MEASUREMENT TECHNOLOGY FOR LOW PARTICULATE EMISSIONS IN A LEGISLATIVE FRAMEWORK</p>
<p>Jan CZERWINSKI Pierre COMTE Martin GUEDEL <i>IC-Engines & Exhaust Emissions Laboratory, Bern University of Applied Sciences, Switzerland</i> Peter BONSACK <i>Air Pollution Control and Chemicals Division, Switzerland</i></p>	<p>CE-2017-311 OTHER POLLUTION SOURCES: NANOPARTICLE EMISSIONS FROM GASOLINE VEHICLES DI & MPI</p>

17.30 – 18.30 Poster Session I Conference Center, Hall

Chairman: Prof. Stawomir LUFT, Poland; Prof. Lech SITNIK, Poland

List of Papers: see page 12

Wednesday – 28th June 2017

9.00 – 11.00 Plenary Session III Conference Center, Congress Room 4
Global trends in engine technology II

Chairman: Prof. Miroslaw WYSZYNSKI, UK; Prof. Marek BRZEŹAŃSKI, Poland

Kurt ENGELJEHRINGER <i>AVL List GmbH, Austria</i>	PTNSS-2017-044 EMISSION REGULATION AND VEHICLE DEVELOPMENT FROM EVOLUTION TO A PARADIGM SHIFT
Christopher KOŁODZIEJ Thomas WALLNER <i>Argonne National Laboratory, USA</i>	CE-2017-427 COMBUSTION CHARACTERISTICS OF VARIOUS FUELS DURING RESEARCH OCTANE NUMBER TESTING ON AN INSTRUMENTED CFR F1/F2 ENGINE
Janbernd HENTSCHEL <i>BMW Group, Germany</i>	PTNSS-2017-045 TIME ALIGNMENT OF VOLUME FLOW AND CONCENTRATION SIGNALS – ISSUES FOR TAILPIPE MEASUREMENTS
Alessandro TANSINI <i>European Commission, JRC, Italy</i>	PTNSS-2017-046 CERTIFICATION OF CO₂ EMISSIONS FROM HDVS IN EUROPE
Friedrich DINKELACKER Sabine DOHRMANN Hauke HANSEN <i>TU Hannover, Germany</i>	PTNSS-2017-047 ENGINE PERFORMANCE AND EMISSION CHARACTERISTICS OF A DIESEL ENGINE OPERATED WITH PRE-VAPORIZED LOW-COST BIOFUEL

11.00 – 11.30 Coffee Break

11.30 – 14.00 Parallel Technical Session I Congress Room 8
Optical research on engine processes

Chairman: Prof. Krzysztof WISŁOCKI, Poland; Prof. Friedrich DINKELACKER, Germany

Patrick GRÜNEBERGER Bernhard JOCHAM Ernst WINKLHOFFER <i>AVL List GmbH, Austria</i>	CE-2017-201 DIESEL COMBUSTION IN HIGH LOAD SITUATIONS: A VISUAL ANALYSIS OF MIXTURE FORMATION AND AIR UTILIZATION
Friedrich DINKELACKER Lennart THIMM Karsten GRÖGER Max KAISER Noritsune KAWAHARADA Hauke HANSEN <i>TU Hannover, Germany</i>	PTNSS-2017-048 INVESTIGATION OF DETAILED INJECTION PROCESSES INSIDE THE INJECTOR AND IN THE SPRAY NEAR FIELD
Łukasz KAPUSTA Andrzej TEODORCZYK <i>Warsaw University of Technology, Poland</i>	PTNSS-2017-029 LASER DIAGNOSTICS FOR UREA-WATER SOLUTION SPRAY CHARACTERIZATION
Joachim DEPPE Stefan SEEFELDT Olaf THIELE <i>LaVision GmbH, Germany</i>	PTNSS-2017-049 AUTOMOTIVE OPTICAL ENGINE INDICATION
Wojciech BUESCHKE Maciej SKOWRON Krzysztof WISŁOCKI <i>Poznan University of Technology, Poland</i>	PTNSS-2017-012 INVESTIGATIONS ON GAS-AIR MIXTURE FORMATION IN THE IGNITION CHAMBER OF TWO-STAGE COMBUSTION SYSTEM USING HIGH-SPEED SCHLIEREN IMAGING
Wojciech CIEŚLIK Ireneusz PIELECHA Krzysztof WISŁOCKI <i>Poznan University of Technology, Poland</i>	PTNSS-2017-006 OPTICAL STUDY WITH THE USE OF RECIRCULATED GASES TO ADIABATIZATION COMBUSTION PROCESS IN THE SI DI ENGINE

11.30 – 14.00 Parallel Technical Session II Congress Room 9
Emissions measurements and aftertreatment

Chairman: Dr Christopher KOLODZIEJ, USA; Prof. Anna JANICKA, Poland

Matthias WEBER <i>Roben Automotive, Poland</i>	CE-2017-435 THE INFLUENCE OF HIGH EFFICIENCY ENGINES AND HYBRIDS ON EXHAUST SYSTEMS
Yoann BERNARD <i>The ICCT (Europe), Germany</i>	PTNSS-2017-050 ON-ROAD RESULTS FROM NATIONAL TESTING CAMPAIGNS, AND SCREENING TECHNIQUE FOR IN-USE TESTING
Jerzy MERKISZ Piotr LIJEWSKI <i>Poznan University of Technology, Poland</i>	PTNSS-2017-051 RDE-PEMS FOR NON-ROAD AND OFF-ROAD APPLICATIONS
Toni KINNUNEN <i>Proventia Emission Control Oy, Finland</i>	PTNSS-2017-052 OPTIMIZED SCR SYSTEMS – THE KEY TO MEET THE HIGHEST NON-ROAD REGULATORY STANDARDS
Alexander TERRES Barouch GIECHASKIEL Andreas NOWAK Volker EBERT <i>BMW Group, Germany</i>	PTNSS-2017-054 CALIBRATION OF PARTICLE NUMBER COUNTERS – WAY TO A MORE ROBUST PEMS AND PMP CALIBRATION
Marek BRZEŻAŃSKI, Michał MARECZEK <i>Cracow University of Technology, Poland</i> Marek SUTKOWSKI Wojciech SMUGA <i>Horus-Energia, Poland</i>	CE-2017-118 A 4-STROKE SPARK-IGNITION ENGINE FUELLED WITH LOW QUALITY GAS

14.00 – 15.00 Lunch Conference Center

15.00 – 17.00 Parallel Technical Session III Congress Room 8
Fuels and alternative powertrain concepts

Chairman: Prof. Toni KINNUNEN, Finland; Prof. Mirosław WENDEKER, Poland

Sjur HAUGEN <i>Circle K Europe, Norway</i>	PTNSS-2017-055 EUROPEAN ROAD TRANSPORTATION FUELS MARKET – A RETAILER PERSPECTIVE
Mirosław WYSZYŃSKI Omid DOUSTDAR Athanasios TSOLAKIS Hamid MAHMOUDI <i>University of Birmingham, UK</i>	CE-2017-414 BIO-KETONES: EXPERIMENTAL INVESTIGATION ON FUEL PROPERTIES OF PENTANONE AND CYCLOPENTANONE BLENDS WHICH CAN BE PRODUCED FROM LIGNOCELLULOSIC BIOMASS
Piotr BIELACZYC, Andrzej SZCZOTKA Joseph WOODBURN <i>BOSMAL Automotive R&D Institute Ltd, Poland</i>	CE-2017-439 EXHAUST EMISSIONS OF PARTICULATE MATTER FROM LIGHT-DUTY VEHICLES – AN OVERVIEW AND THE CURRENT SITUATION
Marek RYŁKO <i>SMA Magnetics, Poland</i>	PTNSS-2017-056 ELECTRIC PROPULSION IN AUTOMOTIVE POWERTRAIN GENERAL OVERVIEW
Andrzej SZALEK <i>Toyota Motor Poland Company</i> Ireneusz PIELECHA, Wojciech CIEŚLIK <i>Poznan University of Technology, Poland</i>	PTNSS-2017-057 CONTROL STRATEGY OF THE FUEL CELL IN URBAN DRIVING CONDITIONS ON THE EXAMPLE OF THE TOYOTA MIRAI
Tomasz KALOCIŃSKI <i>Mercedes AMG High Performance Powertrains</i> Łukasz RYMANIAK, Paweł FUĆ <i>Poznan University of Technology, Poland</i>	PTNSS-2017-058 THE DEVELOPMENT OF HYBRID TECHNOLOGY WITHIN FORMULA ONE POWERTRAIN SYSTEMS

15.00 – 17.00 Parallel Technical Session IV Congress Room 9
Fuel & powertrain development

Chairman: Prof. Robin VANHAELST, Germany; Dr Marek SUTKOWSKI, Poland

<p>Eduardo ANTUNES Andre SILVA Jorge BARATA <i>Universidade Beira Interior, Portugal</i></p>	<p>CE-2017-222 MODELLING OF TRANSCRITICAL AND SUPERCRITICAL NITROGEN JETS</p>
<p>Tomasz SKRZEK <i>University of Technology and Humanities in Radom, Poland</i></p>	<p>CE-2017-206 THE ANALYSIS OF THE POSSIBILITIES OF INCREASING THE SHARE OF PROPANE IN THE FUEL MIXTURE SUPPLIED TO A DUAL FUEL DIESEL ENGINE</p>
<p>Marek BRZEŻAŃSKI <i>Cracow University of Technology, Poland</i> Michał MARECZEK <i>FEV Polska, Poland</i> Wojciech MAREK Tadeusz PAPUGA <i>Cracow University of Technology, Poland</i> Marek SUTKOWSKI <i>Horus-Energia, Poland</i></p>	<p>CE-2017-318 THE REALIZED CONCEPT OF VARIABLE CHEMICAL COMPOSITION FUEL GAS SUPPLY SYSTEMS, FOR INTERNAL COMBUSTION ENGINES</p>
<p>Marcin NOGA <i>Cracow University of Technology, Poland</i></p>	<p>PTNSS-2017-017 VARIOUS ASPECTS OF RESEARCH OF THE SI ENGINE WITH AN ADDITIONAL EXPANSION PROCESS</p>
<p>Jakub LASOCKI Piotr ORLIŃSKI Marcin WOJS Marlena OWCZUK Anna MATUSZEWSKA <i>Warsaw University of Technology, Poland</i></p>	<p>CE-2017-129 HYDROXYL RADICALS AS AN INDICATOR OF KNOCKING COMBUSTION IN THE DUAL-FUEL COMPRESSION-IGNITION ENGINE</p>
<p>Michał GĘÇA <i>Lublin University of Technology, Poland</i></p>	<p>CE-2017-113 CYLINDER-TO-CYLINDER AND CYCLE-TO-CYCLE VARIATION IN COMBUSTION PROCESS IN RADIAL AIRCRAFT ENGINE</p>
<p>Jarosław KAŁUŻNY Jerzy MERKISZ Dawid GALLAS Tomasz RUNKA Milosław KOZAK Ireneusz PIELECHA <i>Poznan University of Technology, Poland</i></p>	<p>CE-2017-101 AN INNOVATIVE SYSTEM FOR PISTON ENGINE COMBUSTION WITH LASER-INDUCED IGNITION OF THE HYDROCARBON FUEL CONSISTING CARBON NANOTUBES</p>
<p>Konrad BUCZEK Sven LAUER <i>FEV Polska, Poland</i></p>	<p>CE-2017-211 FIRING ORDER SELECTION FOR A V20 COMMERCIAL DIESEL ENGINE WITH FEV VIRTUAL ENGINE</p>
<p>Beata ŚWIECZKO-ŻUREK Grzegorz RONOWSKI Jerzy EJSMONT <i>Technical University of Gdansk, Poland</i></p>	<p>CE-2017-110 TYRE ROLLING RESISTANCE AND ITS INFLUENCE ON FUEL CONSUMPTION</p>

17.00 – 18.00 Poster Session II Conference Center, Hall

Chairman: Prof. Tomasz KNIAZIEWICZ, Poland; Prof. Piotr BOGUŚ, Poland

List of Papers: see page 18

Thursday – 29th June 2017

9.00 – 11.30 INDUSTRIAL SESSION Conference Center, Congress Room 4

Chairman: Prof. Wojciech GIS, Poland;		Prof. Antoni ŚWIĄTEK, Poland
Maciej HADRYŚ <i>MAHLE Polska Sp. z o.o., Poland</i>	EVOLUTION OF MODERN GASOLINE PISTONS – FROM ECOFORM, THROUGH EVOTEC TO EVOTEC2	
Rafał SALA <i>BOSMAL Automotive R&D Institute Ltd, Poland</i>	BOSMAL FOR AUTOMOTIVE INDUSTRY	
Wojciech GIS <i>Motor Transport Institute, Poland</i>	MOTOR TRANSPORT IN POLAND – HYDROGENIZATION	
Rafał GRZESZCZYK <i>Automex, Poland</i>	SELECTED ASPECTS OF HYPOCYCLOID	
Markus BOECK <i>Horiba, Japan</i>	THE CONTINUING RISE OF REAL DRIVING EMISSIONS	
Adam PIOTROWSKI <i>Solaris Bus & Coach S.A., Poland</i>	DEVELOPMENT OF MODERN URBAN BUSES	
Jan SZCZEPANIAK <i>Industrial Institute of Agricultural Engineering, Poland</i>	SCIENCE AND ENGINEERING IN MODERN AGRICULTURAL INDUSTRY	
Ryszard KĘDZIA <i>Autoelektronika, Poland</i>	VOCATIONAL TRAINING REFORM FOR AUTOMOTIVE SPECIALIZATIONS	
Zbigniew DURZYŃSKI <i>The Rail Vehicles Institute TABOR, Poland</i>	ISSUES OF RAIL VEHICLES TESTING	
Andrzej SZALEK <i>Toyota Motor Poland Company</i>	ALTERNATIVE ENERGIES IN VEHICLES – TOYOTA INNOVATIONS	
Marianna JACYNA <i>Warsaw University of Technology, Poland</i>	SCIENTIFIC AND ECONOMIC COOPERATION ON THE EXAMPLE OF SIMMAG3D PROJECT	
Andrzej BOBIŃSKI <i>Logifact, Poland</i>		

11.30 – 12.00 Closing Ceremony Conference Center, Congress Room 4

12.00 – 13.00 Lunch Conference Center

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<p>Jerzy MERKISZ Łukasz RYMANIAK <i>Poznan University of Technology, Poland</i></p>	<p>CE-2017-310 DETERMINING THE ENVIRONMENTAL INDICATORS FOR VEHICLES OF DIFFERENT CATEGORIES IN RELATION TO CO₂ EMISSION BASED ON ROAD TESTS</p>
<p>Jerzy MERKISZ Maciej SIEDLECKI <i>Poznan University of Technology, Poland</i></p>	<p>PTNSS-2017-027 SPECIFIC EMISSIONS ANALYSIS FOR A COMBUSTION ENGINE IN DYNAMOMETER OPERATION IN RELATION TO THE THERMAL STATE OF THE EXHAUST GAS AFTERTREATMENT SYSTEMS IN A MODIFIED NRSC TEST</p>
<p>Jerzy MERKISZ Marek WALIGÓRSKI <i>Poznan University of Technology, Poland</i></p>	<p>CE-2017-204 RECOGNITION OF COMBUSTION PROCESS IRREGULARITIES IN SMALL VOLUME DISPLACEMENT DIESEL ENGINES WITH THE USE OF NON-DIMENSIONAL CHARACTERISTICS OF THE VIBRATION SIGNAL</p>
<p>Agnieszka MERKISZ-GURANOWSKA <i>Poznan University of Technology, Poland</i></p>	<p>CE-2017-404 PRODUCT RECYCLING OF AUTOMOTIVE PARTS – TRENDS AND ISSUES</p>
<p>Jan MONIETA <i>Maritime University of Szczecin, Poland</i></p>	<p>CE-2017-324 MODELLING OF THE FUEL INJECTION OF MEDIUM SPEED MARINE DIESEL ENGINES</p>
<p>Małgorzata MROZIK Krzysztof DANILECKI <i>West Pomeranian University of Technology in Szczecin, Poland</i></p>	<p>CE-2017-419 ENVIRONMENTAL ASSESSMENT OF THE PRODUCTION PROCESS OF INTERNAL COMBUSTION ENGINES</p>
<p>Mateusz NOWAK Jacek PIELECHA <i>Poznan University of Technology, Poland</i></p>	<p>PTNSS-2017-026 COMPARISON OF EXHAUST EMISSION ON THE BASIS OF REAL DRIVING EMISSIONS MEASUREMENTS AND SIMULATIONS</p>
<p>Jacek NOWAKOWSKI Krzysztof BRZOZOWSKI Tomasz KNEFEL <i>University of Bielsko-Biala, Poland</i></p>	<p>CE-2017-329 FORMULATION OF A TASK TO CONTROL OF HARMFUL EXHAUST EMISSIONS FROM COMPRESSION IGNITION ENGINE</p>
<p>Marcin OPALIŃSKI Andrzej TEODORCZYK Jakub KALKE <i>Power and Aeronautical Engineering, Poland</i></p>	<p>CE-2017-125 THE CLOSED-CYCLE MODEL NUMERICAL ANALYSIS OF THE IMPACT OF CRANK MECHANISM DESIGN ON ENGINE EFFICIENCY</p>
<p>Małgorzata ORCZYK Franciszek TOMASZEWSKI <i>Poznan University of Technology, Poland</i></p>	<p>PTNSS-2017-034 METHOD OF REDUCTION OF DIAGNOSTIC PARAMETERS DURING OBSERVATION ON THE EXAMPLE OF A COMBUSTION ENGINE</p>
<p>Tomasz OSIPOWICZ Karol Franciszek ABRAMEK <i>West Pomeranian University of Technology, Poland</i></p>	<p>CE-2017-109 DIAGNOSING METHODS COMMON RAIL FUEL INJECTORS</p>
<p>Tomasz OSIPOWICZ Maciej LISOWSKI <i>West Pomeranian University of Technology, Poland</i></p>	<p>CE-2017-403 THE INFLUENCE CORROSION PHENOMENA ON WORK PARAMETERS MODERN FUEL INJECTORS CI – ENGINES</p>
<p>Tomasz OSIPOWICZ Karol Franciszek ABRAMEK <i>West Pomeranian University of Technology, Poland</i></p>	<p>CE-2017-128 THE ANALYSIS OF TEMPERATURE DISINTEGRATION ON THE BODY OF FUEL INJECTOR DURING RESEARCH ON TEST BENCH</p>

Marlena OW CZUK
Anna MATUSZEWSKA
Małgorzata ODZIEMKOWSKA
Automotive Industry Institute, Poland
Mateusz BEDNARSKI
Marcin Krzysztof WOJS
Jakub LASOCKI
Warsaw University of Technology, Poland

CE-2017-212
EVALUATION OF THE IMPACT OF THE HYDRATION DEGREE OF BIOETHANOL ON THE OPERATION PARAMETERS OF THE SPARK-IGNITION ENGINE

Krzysztof PARCZEWSKI
Kazimierz M. ROMANISZYN
University of Bielsko-Biala, Poland

CE-2017-119
THE PROPOSITION OF UTILISATION THE VEHICLE IN 1: 5 SCALE TO CONSTRUCTION AND TESTING OF AN AUTONOMOUS VEHICLE

Krzysztof PARCZEWSKI
Henryk WNEK
University of Bielsko-Biala, Poland

CE-2017-121
THE INFLUENCE OF VEHICLE BODY ROLL ANGLE ON THE MOTION STABILITY AND MANEUVERABILITY OF THE VEHICLE

Piotr PIĄTKOWSKI
Ryszard LEWKOWICZ
Ryszard ŚCIEGIENKA
Janusz MYSŁOWSKI
Koszalin University of Technology, Poland

CE-2017-434
THE IMPACT OF INTAKE CHANNEL GEOMETRY ON IN-CYLINDER SWIRL

Wiesław PIEKARSKI
Andrzej KURANC
University of Life Sciences in Lublin, Poland

CE-2017-402
EXHAUST EMISSIONS AND FUEL CONSUMPTION IN A CHASSIS DYNAMOMETER LOAD TEST IN THE ASPECT OF MODIFICATION OF AN ENGINE CONTROLLING SYSTEM

Ireneusz PIELECHA
Wojciech BUESCHKE
Wojciech CIEŚLIK
Maciej SKOWRON
Poznan University of Technology, Poland

PTNSS-2017-010
TURBULENT SPARK-JET IGNITION IN SI GAS FUELLED ENGINE

Jacek PIELECHA
Remigiusz JASIŃSKI
Agnieszka MAGDZIAK
Poznan University of Technology, Poland

PTNSS-2017-021
PRACTICABILITY OF PASSENGER VEHICLE DRIVING EMISSION TESTS ACCORDING TO NEW EUROPEAN UNION PROCEDURES

Dariusz PIETRAS
Tomasz KNEFEL
Mateusz SATŁAWA
University of Bielsko-Biala, Poland

PTNSS-2017-033
THE EXPERIMENTAL DETERMINATION OF THE RELATIONSHIP BETWEEN THE ENERGISING TIME OF THE COMMON RAIL INJECTOR AND THE SET FUEL QUANTITY AND RAIL PRESSURE

Bogdan POJAWA
Polish Naval Academy in Gdynia, Poland

CE-2017-437
ENERGY RESEARCH OF LM 2500 NAVAL GAS TURBINE FOR MODELING AND SIMULATION PURPOSES

Rafał PYSZCZEK
Paweł MAZURO
Agnieszka JACH
Andrzej TEODORCZYK
Warsaw University of Technology, Poland

CE-2017-210
NUMERICAL INVESTIGATION ON LOW CALORIFIC SYNGAS COMBUSTION IN THE OPPOSED-PISTON ENGINE

Dariusz PYZA
Roland JACHIMOWSKI
Piotr GOŁĘBIEWSKI
Michał KŁODAWSKI
Emilian SZCZEPAŃSKI
Warsaw University of Technology, Poland

PTNSS-2017-064
CATALOGS AND THEIR FUNCTIONS IN THE CREATION OF DATABASES FOR IT TOOLS

Rafał ROGÓŻ
Piotr JAWORSKI
Łukasz Jan KAPUSTA
Andrzej TEODORCZYK
Warsaw University of Technology, Poland

CE-2017-311
THE INFLUENCE OF THE INJECTION FREQUENCY ON THE UREA SELECTIVE CATALYTIC REDUCTION SYSTEMS PERFORMANCE

Adam ROJEWSKI
Jarosław BARTOSZEWICZ
Poznan University of Technology, Poland

CE-2017-228
USAGE OF WING IN GROUND EFFECT TO MAINTAIN LIFT FORCE WITH REDUCED FUEL CONSUMPTION OF AIRCRAFT

Ewa ROSTEK <i>Motor Transport Institute, Poland</i> Maciej BABIAK <i>Poznan University of Technology, Poland</i>	CE-2017-332 THERMOGRAVIMETRIC ANALYSIS IN THE SYNTHETIC ENGINE OIL 5W-30
Arkadiusz RYBAK Jacek HUNICZ Paweł KRZACZEK <i>Lublin University of Technology, Poland</i> Wojciech GOLIMOWSKI Damian MARCINKOWSKI <i>Institute of Technology and Life Sciences in Poznan, Poland</i>	CE-2017-407 EFFECT OF DIFFERENT BIOFUELS ON COMMON RAIL INJECTOR FLOW RATE
Łukasz RYMANIAK <i>Poznan University of Technology, Poland</i>	PTNSS-2017-009 COMPARISON OF THE COMBUSTION ENGINE OPERATING PARAMETERS AND THE ECOLOGICAL INDICATORS OF AN URBAN BUS IN DYNAMIC TYPE APPROVAL TESTS AND IN ACTUAL OPERATING CONDITIONS
Łukasz RYMANIAK Andrzej ZIÓŁKOWSKI Dawid GALLAS <i>Poznan University of Technology, Poland</i>	PTNSS-2017-025 PARTICLE NUMBER AND PARTICULATE MASS EMISSIONS OF HEAVY DUTY VEHICLES IN REAL OPERATING CONDITIONS
Rafał SALA Jarosław KRASOWSKI Jakub DZIDA <i>BOSMAL Automotive R&D Institute Ltd, Poland</i>	PTNSS-2017-035 THE INFLUENCE OF ENGINE WARM UP PHASE ON NITROGEN OXIDES EMISSION FOR HEAVY-DUTY EURO VI DIESEL ENGINE
Ksenia SIADKOWSKA Adam MAJCZAK Grzegorz BARAŃSKI <i>Lublin University of Technology, Poland</i>	CE-2017-126 STUDYING A CONSTRUCTION OF PISTONS FOR THE AIRCRAFT CI ENGINE
Krzystian SICZEK Krzysztof SICZEK <i>Lodz University of Technology, Poland</i>	CE-2017-116 STUDIES ON THE DYNAMICS THE VALVE TRAIN WITH MACHINED VALVE SPRINGS
Maciej SIDOROWICZ Ireneusz PIELECHA <i>Poznan University of Technology, Poland</i>	CE-2017-309 EVALUATION OF THE POSSIBILITY OF HYDROCARBON FUELS FLAMMABILITY MIXED DIRECTLY IN COMBUSTION CHAMBER
Maciej SIEDLECKI Piotr LIJEWSKI Sylwester WEYMANN <i>Poznan University of Technology, Poland</i>	PTNSS-2017-028 ANALYSIS OF TRACTOR PARTICULATE EMISSIONS IN A MODIFIED NRSC TEST AFTER IMPLEMENTING A PARTICULATE FILTER IN THE EXHAUST SYSTEM
Lech J. SITNIK <i>Wroclaw University of Science and Technology, Poland</i>	CE-2017-440 STATISTIC OF FUEL CONSUMPTION IN TEST AND IN NATURAL OPERATION OF VEHICLES
Anna SKARBEEK-ŻABKIN <i>Motor Transport Institute, Poland</i>	CE-2017-432 EFFECT OF THE ADDITION OF SYNTHETIC FUEL ON THE SELECTED PHYSICO-CHEMICAL PROPERTIES OF THE FUEL FOR THE SELF-IGNITION ENGINES
Maciej SKOWRON Ireneusz PIELECHA Krzysztof WISLOCKI <i>Poznan University of Technology, Poland</i>	CE-2017-431 OPTICAL TESTS AS THE BASIS FOR CREATING MATHEMATICAL MODELS TO DELAY OPENING OF CIDI INJECTORS
Maria SKRĘTOWICZ Joanna WOŹNIAK Radosław WRÓBEL <i>Wroclaw University of Science Technology, Poland</i>	CE-2017-214 EVALUATION OF THE EFFICIENCY OF THE THREE-WAY CATALYTIC CONVERTER OF A SPARK IGNITION ENGINE OF THE CHOSEN AROMATIC HYDROCARBONS REMOVING
Rafał SMOLEC Mateusz BOR Marek IDZIOR Wojciech KARPIUK Miłosław KOZAK <i>Poznan University of Technology, Poland</i>	CE-2017-232 ASSESSMENT OF THE POTENTIAL OF DIMETHYL ETHER AS AN ALTERNATIVE FUEL FOR COMPRESSION IGNITION ENGINES

Rafał SOCHACZEWSKI Zbigniew CZYŻ Ksenia SIADKOWSKA <i>Lublin University of Technology, Poland</i>	CE-2017-325 MODELING A FUEL INJECTOR FOR A TWO-STROKE DIESEL ENGINE
Włodzimierz STAWECKI <i>Rail Vehicles Institute TABOR in Poznan, Poland</i> Maciej BAJERLEIN <i>Poznan University of Technology, Poland</i>	CE-2017-442 MODERN HIGH-RESISTANCE ALLOY STEEL USED IN RAILWAY TRANSPORT
Włodzimierz STAWECKI <i>Rail Vehicles Institute TABOR in Poznan, Poland</i> Jerzy MERKISZ Maciej BAJERLEIN <i>Poznan University of Technology, Poland</i> Paweł DASZKIEWICZ <i>Rail Vehicles Institute TABOR in Poznan, Poland</i>	CE-2017-424 NEW TECHNOLOGIES OF ENHANCED PLASTIC FOR USE IN RAIL VEHICLES TO REDUCE NOISE EMISSIONS
Zbigniew STĘPIEŃ <i>Oil and Gas Institute – National Research Institute, Poland</i>	PTNSS-2017-002 DETERIORATION OF THE FUEL INJECTION PARAMETERS AS A RESULT OF COMMON RAIL INJECTORS DEPOSIT FORMATION
Zdzisław STELMASIAK Jerzy LARISCH Dariusz PIETRAS <i>University of Bielsko-Biala, Poland</i>	CE-2017-205 ISSUES RELATED TO NATURALLY ASPIRATED AND SUPERCHARGED CI ENGINES FUELED WITH DIESEL OIL AND CNG GAS
Zdzisław STELMASIAK Jerzy LARISCH Dariusz PIETRAS <i>University of Bielsko-Biala, Poland</i>	CE-2017-307 SELECTION OF AN ALGORITHMS CONTROLLING OPERATION OF SUPERCHARGED COMPRESSION IGNITION ENGINE WITH ADDITIONAL FUELING WITH CNG GAS
Zdzisław STELMASIAK Dariusz PIETRAS <i>University of Bielsko-Biala, Poland</i>	CE-2017-115 THE EVALUATION OF THE REGULARITY OF THE COMBUSTION PROCESS IN THE SI ENGINE FUELED WITH PETROL AND ETHANOL
Mieczysław STRUŚ Wojciech POPRAWSKI <i>Wroclaw University of Technology, Poland</i> Mariusz REWOLTE <i>Proagroenergia, Poland</i>	CE-2017-306 TESTING OF THE FLEET OF THE VEHICLES WITH DIESEL ENGINES FED BY BIOXDIESEL FUEL
Tomasz SZCZEPAŃSKI Anna SKARBK-ŻABKIN Paweł DZIEDZIAK <i>Motor Transport Institute, Poland</i>	CE-2017-445 IMPACT OF THE ROAD CONDITIONS ON THE AMOUNT OF BRAKING ENERGY
Sławomir SZRAMA <i>31st Air Force Base Poznan-Krzesiny, Poland</i> Adam KADZIŃSKI <i>Poznan University of Technology, Poland</i>	CE-2017-412 HAZARD IDENTIFICATION PROCESS IN THE SELECTED ANALYSIS DOMAIN OF THE F100 TURBOFAN ENGINES MAINTENANCE SYSTEM
Grzegorz M. SZYMAŃSKI Wojciech MISZTAL <i>Poznan University of Technology, Poland</i>	CE-2017-448 ANALYSIS OF MEASUREMENT POINTS SENSITIVITY OF VIBRATION SIGNALS ON THE STAND OF JET ENGINE
Michał ŚMIEJA Sławomir WIERZBICKI <i>University of Warmia and Mazury in Olsztyn, Poland</i> Jarosław MAMALA <i>Opole University of Technology, Poland</i>	CE-2017-436 CAN NETWORK IN REAL TIME ON BOARD SYSTEMS
Piotr ŚWIĄTEK Paweł FUC <i>Poznan University of Technology, Poland</i> Artur CEBULA <i>Cracow University of Technology, Poland</i> Sebastian KOWALCZYK <i>Ensys SC, Poland</i>	PTNSS-2017-008 FLOW BENCH TESTING OF PROTOTYPE INTAKE MANIFOLDS FOR ULTRALIGHT AIRCRAFT ENGINE

Tytus TULWIN Mirosław WENDEKER Zbigniew CZYŻ <i>Lublin University of Technology, Poland</i>	CE-2017-301 THE SWIRL RATIO INFLUENCE ON COMBUSTION PROCESS AND HEAT TRANSFER IN THE OPPOSED PISTON COMPRESSION-IGNITION ENGINE
Robin VANHAELST Caroline BANNACK Maik KLOSE <i>Automotive Engineering at University of Applied Sciences, Germany</i>	CE-2017-208 COMPARISON OF TWO MEASUREMENT METHODS FOR THE DETERMINATION OF EXTENDED TURBINE MAPS AT THE EATL TEST BENCH OF THE OSTFALIA UAS
Mariusz WASIAK Marianna JACYNA <i>Warsaw University of Technology, Poland</i> Andrzej BOBIŃSKI <i>Logifact, Poland</i>	PTNSS-2017-061 COMPUTER AIDED DESIGNING OF LOGISTICS INFRASTRUCTURE ON THE EXAMPLE OF SIMMAG3D
Grzegorz WCISŁO Bolesław PRACUCH Agnieszka LEŚNIAK <i>Malopolskie Centre for Renewable Energy Sources "BioEnergia", Poland</i>	PTNSS-2017-066 DETERMINATION OF THE EFFECT OF THE 2ND GENERATION BIODIESEL ADDITIVE ON THE FRACTIONAL COMPOSITION OF BIOFUELS
Grzegorz WCISŁO Bolesław PRACUCH Agnieszka LEŚNIAK Marek KUZKA <i>Malopolskie Centre for Renewable Energy Sources "BioEnergia", Poland</i>	PTNSS-2017-067 DETERMINATION OF THE RHEOLOGICAL PARAMETERS OF ENGINE OILS CONTAINING A COOLANT
Kazimierz WITKOWSKI <i>Gdynia Maritime Academy, Poland</i>	PTNSS-2017-005 THE IMPACT OF THE ACCURACY OF INDICATOR DIAGRAMS ON THE HEAT RELEASE CHARACTERISTICS CALCULATION, USED IN THE DIAGNOSIS OF MARINE DIESEL ENGINE
Paweł WIRKOWSKI Tomasz KNIAZIEWICZ <i>Polish Naval Academy, Poland</i>	CE-2017-415 EVALUATION OF MARINE GAS TURBINE ENGINE PARAMETERS IN TERMS OF ISSUE OF EMISSIONS OF EXHAUST TOXIC FUMES
Marcin K. WOJS Piotr ORLIŃSKI Jakub LASOCKI <i>Warsaw University of Technology, Poland</i>	CE-2017-112 THE EFFECT OF ALTERNATIVE FUELS INJECTION TIMING ON TOXIC SUBSTANCES FORMATION IN CI ENGINES
Andrzej WOLFF <i>Warsaw University of Technology, Poland</i>	CE-2017-328 INFLUENCE OF PISTON RING PACK CONFIGURATION ON BLOWBY AND FRICTION LOSSES IN A MARINE TWO-STROKE ENGINE
Zbigniew WOŁCZYŃSKI <i>University of Technology and Humanities in Radom, Poland</i>	CE-2017-233 THE EVALUATION OF USEFULNESS OF MASSFLOW METER TO THE SURVEY OF FILLING THE CYLINDER OF SI ENGINE IN A CYCLE
Barbara WORSZTYNOWICZ <i>AGH University of Science and Technology, Poland</i>	CE-2017-409 INFLUENCE OF THE METHOD OF IMPLEMENTING THE FORCED AIR FLOW THROUGH THE COOLING SYSTEM ON THE TEMPERATURE OF THE COOLANT IN HEAVY- DUTY ENGINES
Barbara WORSZTYNOWICZ Andrzej UHRYŃSKI Bartłomiej BORKOWSKI Marek PLUTA <i>AGH University of Science and Technology, Poland</i>	CE-2017-305 THE ANALYSIS OF THERMAL STATE OF CATALYTIC CONVERTER DEPENDING ON FUEL SUPPLY AND ENGINE LOAD USING THERMO-VISION
Aleksander WRÓBLEWSKI <i>University of Warmia and Mazury in Olsztyn, Poland</i>	CE-2017-108 MULTI-CRITERIA FUEL SYSTEM SYNTHESIS WITH AN ELECTRONIC CONTROL UNIT
Emil WRÓBLEWSKI Antoni ISKRA Maciej BABIAK <i>Poznan University of Technology, Poland</i>	PTNSS-2017-003 SIMULATIONS GEOMETRIC STRUCTURES OF THE STEPPED PROFILE BEARING SURFACE OF THE PISTON

Emil WRÓBLEWSKI Antoni ISKRA Maciej BABIAK <i>Poznan University of Technology, Poland</i>	PTNSS-2017-004 THE IMPACT OF MICROGEOMETRY PISTONS WITH A STEPPED BEARING SURFACE FOR THE FRICTION LOSS OF THE INTERNAL COMBUSTION ENGINE
Piotr WRÓBLEWSKI <i>Poznan University of Technology, Poland</i>	CE-2017-114 EFFECT OF ASYMMETRIC ELLIPTICAL SHAPES OF THE SEALING RING SLIDING SURFACE ON THE MAIN PARAMETERS OF THE OIL FILM
Piotr WRÓBLEWSKI <i>Poznan University of Technology, Poland</i>	CE-2017-418 THE INFLUENCE OF THE VARIABLE CHARACTERISTICS DISTRIBUTION OF THE SEALING RINGS SLIDING SURFACES PARABOLIC AND ELLIPTICAL ASYMMETRIES ON THE FRICTION LOSSES COEFFICIENTS AND OTHER SELECTED OIL FILM PARAMETERS
Oskar WYSOCKI Jacek KROPIWNICKI Jacek CZYŻEWICZ <i>Gdańsk University of Technology, Poland</i>	CE-2017-406 ANALYSIS OF THE POSSIBILITY OF DETERMINING THE GENERAL CHARACTERISTICS USING THE OPERATIONAL DATA OF A VEHICLE ENGINE
Marcin ZACHAREWICZ Tomasz KNIAZIEWICZ <i>Polish Naval University, Poland</i>	PTNSS-2017-001 MATHEMATICAL MODELLING MALFUNCTIONS OF MARINE DIESEL ENGINE
Ryszard ZADRĄG <i>Gdansk University of Technology, Poland</i> Tomasz KNIAZIEWICZ <i>Polish Naval Academy, Poland</i>	CE-2017-408 UTILIZATION OF THE ZERO UNITARIZATION METHOD FOR THE BUILDING OF A RANKING FOR DIAGNOSTIC MARINE ENGINE PARAMETERS
Andrzej ZIÓLKOWSKI <i>Poznan University of Technology, Poland</i>	PTNSS-2017-024 AUTOMOTIVE THERMOELECTRIC GENERATOR IMPACT ON THE EFFICIENCY OF A DRIVE SYSTEM WITH A COMBUSTION ENGINE
Andrzej ŻÓŁTOWSKI <i>Motor Transport Institute, Poland</i>	CE-2017-304 INFLUENCE OF AFTER-TREATMENT SYSTEMS ON NO₂ EMISSIONS IN DIESEL ENGINES
Andrzej BIENIEK Mariusz GRABA Krystian HENNEK Jarosław MAMAŁA <i>Opole University of Technology, Poland</i>	PTNSS-2017-070 ANALYSIS OF FUEL CONSUMPTION OF A SPARK IGNITION ENGINE IN THE CONDITIONS OF A VARIABLE LOAD

CONGRESS LOCATION AND TRAVEL DETAILS

The proceedings of the Congress will be held in the Conference Center of Poznan University of Technology (PUT).

Address location: Piotrowo 2 Str., 60-965 Poznan, POLAND.

GPS location: 52°24'13.7"N, 16°56'57.7"E (52.4038139, 16.949362)

Details of the travel:

- Train communication to Poznan
 - direct links are available from various cities of Poland
 - for more detailed information on train connection please visit: <http://www.pkp.com.pl>
- Taxi in Poznan:

– Express Taxi	196 63	600 009 663
– Multi Taxi	196 66	722 008 070
– RMI Taxi	196 68	512 219 219
– M1 Taxi	196 69	61 8222 222
- Public transport

From the Railway station to:

 - Congress Center: tram line 8 (tram stop Politechnika)
 - Hotel Ibis: tram line 8 (tram stop Most Sw. Rocha)
 - Park Hotel: tram line 6 (tram stop Baraniaka) and then bus line 84 (bus stop Wolkowyska)
 - Novotel Centrum Hotel: tram lines 10, 18 and 19 (tram stop Wierzbiecice)
 - Novotel Malta Hotel: tram line 8 (tram stop Termy)
 - Hotel Wloski: tram lines 12, 18 and 19 (tram stop Polwiejska)

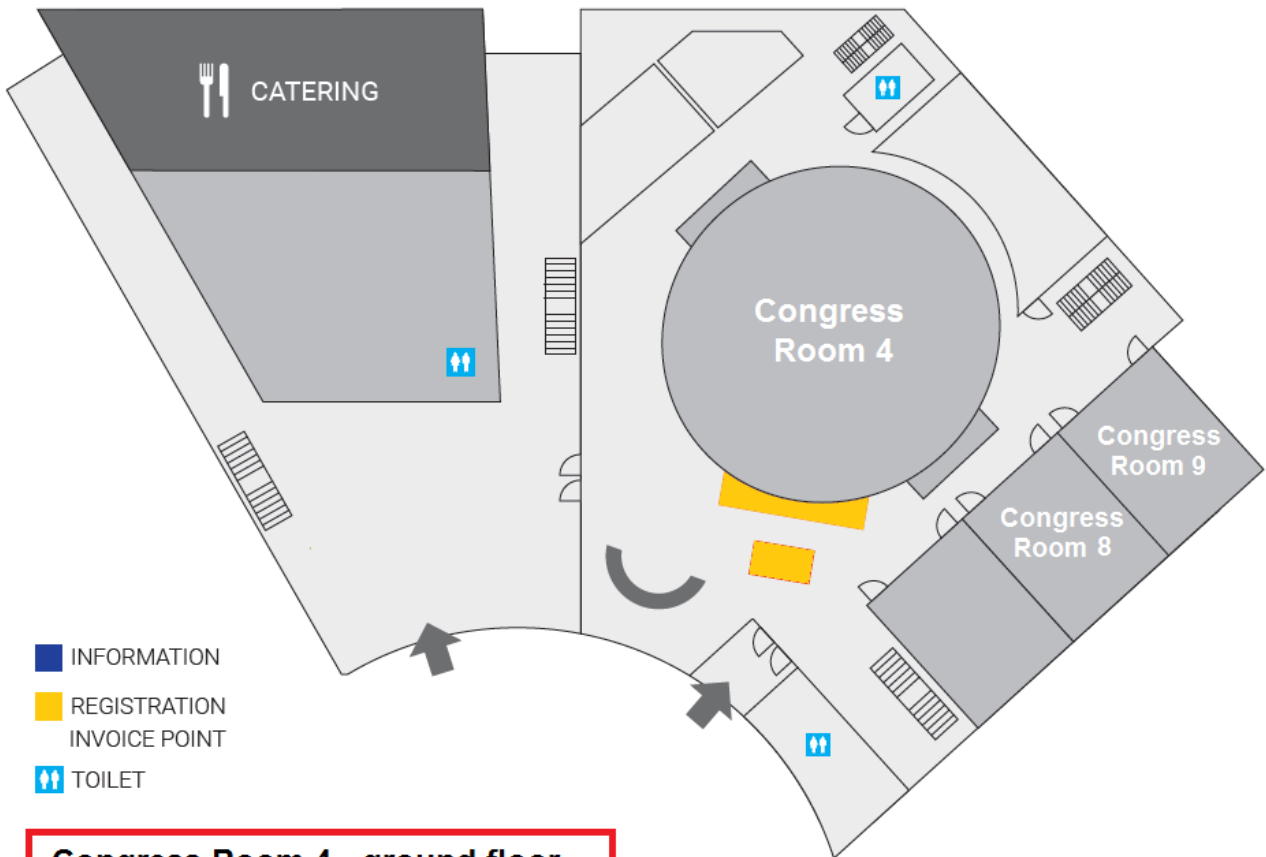
To the Conference Center from:

 - Hotel Ibis: tram lines 8, 14 and 16 (tram stop Politechnika)
 - Park Hotel: bus line 84 (bus stop Baraniaka)
 - Novotel Centrum Hotel: tram line 6 (tram stop Kornicka)
 - Novotel Malta Hotel: tram line 8 (tram stop Baraniaka)
 - Hotel Wloski: tram line 6 (tram stop Baraniaka)
- Individual transport

GPS location of Congress important places:

– Conference Center of PUT	52°24'13.7"N, 16°56'57.7"E	(52.4038139, 16.949362)
– Ibis Hotel	52°24'7.8"N, 16°56'30.0"E	(52.4021863, 16.941687)
– Park Hotel	52°24'0.0"N, 16°58'19.0"E	(52.400022, 16.971969)
– Novotel Centrum Hotel	52°24'5.9"N, 16°55'26.8"E	(52.401662, 16.924134)
– Novotel Malta Hotel	52°24'26.6"N, 16°58'25.8"E	(52.407393, 16.973834)
– Hotel Wloski	52°23'51.4"N, 16°55'35.1"E	(52.397637, 16.926420)
– Restaurant in Szreniawa	52°18'50.7"N, 16°47'45.9"E	(52.314047, 16.796111)
- Buses will collect guests from Congress Center and transport to special event on 28th June 2017

Important places – localization on maps



**Congress Room 4 - ground floor
Congress Room 8 and 9 - 1st floor**

