



Co-funded by the Erasmus+ Programme of the European Union

Technical University of Civil Engineering Bucharest (UTCB) Research Profile

Florin BĂLTĂREŢU **UTCB Vice-Rector** flbaltaretu@utcb.ro

of Athens

1-2 JUNE 2022

PERSPECTIVES IN SMART URBAN COASTAL SUSTAINABILITY RESEARCH



UTCB Key Figures

Technical University of Civil Engineering Bucharest (UTCB) is a specialized Romanian university entirely devoted to education and research in Civil Engineering and related fields.

UTCB is composed by 7 Faculties:

- Civil, Industrial and Agricultural Buildings Faculty
- Building Services Engineering Faculty
- Hydrotechnics Faculty
- Geodesy Faculty
- Railways, Roads and Bridges Faculty
- Mechanical Equipment for Constructions and Robotics Faculty
- Engineering in Foreign Languages Faculty (Civil Engineering)



UTCB Key Figures

Strategic directions of research:

Resilience to disasters Energy Efficiency Smart Buildings and Smart Cities

Some areas of relevant research

- seismic hazard, fragility and risk analysis; seismic protection of structures;
- retrofitting of buildings; new building materials;
- building services systems (HVAC & R, mechanical and electrical installations), energy supply and co-generation networks, energy efficiency of building services systems and related equipment, control systems and BMS;
- geotechnical problems in special soil conditions;
- ecology and environmental protection;
- hydraulics & hydraulic structures; water supply, water sewage and wastewater treatment;
- bridges and transportation networks;
- geodesy, photogrammetry and remote sensing;
- mechanical engineering and robotics.



Institutional research structure

- Generally, each Faculty manages its own Departments and Research Centers.
- However, some Departments and Research Centers are transversal.
- There are 19 Research Centers (including their laboratories) and 6 Accredited Laboratories.
- Research is also done in other specialized Laboratories.
- In UTCB the research work is carried out mainly by the teaching staff, and by a quite limited number of research employees, with the involvement of postgraduate and doctoral students.
- A Quality Management System is implemented, based on the SR EN ISO 9001:2015 standard and on the SR EN ISO IWA 2:2009 agreement, certified by an autonomous certification organization.
- There is large number of available services.



Institutional research structure - Research Centers /

CIVIL ENGINEERING

- Reinforced concrete structures
- 🛓 Seismic Risk Assessment
- Structural Engineering, Probabilistic Modelling of Loads and Risk Assessment of Structural Systems "Prof. Dan Ghiocel"
- Strength of Materials "Professor Panaite Mazilu"
- Geotechnical Engineering
- Roads and Airports
- Mineral Waste Valorization into Construction Materials

WATER ENGINEERING

Water Resources Development and Management

Groundwater Engineering SOCIAL SCIENCES AND HUMANITIES

- Research Center for Applied Ethics
- Research Center for Specialized Translation and Intercultural Communication

ENERGY & BUILDINGS

- LAMBI Ambient Quality and Building Physics
- Thermal Sciences
- Energy Efficiency in Buildings
- Electrical Engineering and Lighting

MECHANICAL ENGINEERING

Technological Equipment Engineering in Construction

GEODESY

- Space Geodesy, Photogrammetry, Remote Sensing and GIS (GEOS)
- Geodetic Engineering Measurements and Spatial Data Infrastructures

OTHER ENGINEERING

- Mathematics and Computer Science
- Hydraulics & Hydraulic Machines Laboratory



Aerodynamics and Wind Engineering Laboratory







Structural Testing – Reaction frame





Structural Testing – RC elements









Seismic Network – Free field stations



9



Seismic Network – Borehole and Free Field Stations











Seismic Network – Buildings instrumented

Reinforced Concrete Structures Research Center

The research center conducts research and experimental development projects related to the improvement of concrete and reinforced concrete products and applied research experience in the fields of:

- Sustainable design and execution of building structures;
- Durability and operational stability of construction components;
- Green concrete: use of composite cements and recycled aggregates;
- Load-bearing and deformation behavior as well as in reinforced concrete and prestressed concrete.



Steel reinforcement



Mechanical properties of different types of steel reinforcement



Reinforced Concrete Structures Research Center

Durability of the concrete

Natural indoor exposure Atmospheric levels of carbon dioxide - chamber test or natural exposure site

Accelerate test



Effect of cement types on carbonation depth of concrete





Reinforced Concrete Structures Research Center

Assessment of in situ characteristic concrete strength



In situ methods to assess the characteristic concrete strength







Relevant research infrastructure

Wind tunnel Computer controlled variable geometry





Relevant research infrastructure

Wind tunnel Computer controlled variable geometry





Relevant research infrastructure

Wind tunnel Computer controlled variable geometry



Relevant projects















Universitates Tehnică de Constructil Bueuraști







Universitates Littleta de Construcci (Bucuresti





Expertise

Universitatea Tehnio3 ce Construcți Euc.regi









Universitatela Tennica Se Conductif Boorest

Groundwater Engineering Research Center

Groundwater Engineering Research Center is a multi-disciplinary research center founded in 2011 focusing mainly on applied hydrogeology studies and the interaction between urban infrastructure and groundwater.

Research directions

- Urban Hydrogeology
- Applied Hydrogeology
- River hydraulics Flood modelling
- Green infrastructure design
- Groundwater pollution
- Urban groundwater ecosystem services
- Spatial data hydrogeology data structures
- Geographic information systems and spatial analysis in hydrogeology
- Hydrogeological modeling
- Remediation of contaminated areas
- Development of data transfer languages in geosciences





23

Groundwater Engineering Research Center

International Research Projects

- 2016 2020 BRIGAID Bridging the Gap for Innovations in Disaster Resilience, H2020 EU
- 2016 2019 INXCES INnovations for eXtreme Climatic EventS, ERA-NET WaterWorks
- 2014 2016-2018 Aquifer intrinsic vulnerability mapping: experimentation and theoretical development in Romania, Wallonie-Bruxelles International (WBI)
- 2013 2017 SUB-URBAN A European network to improve understanding and use of the ground beneath our cities COST Action TU1206, http://sub-urban.squarespace.com/, European Commision COST Action
- 2016 Framework for urban groundwater and shallow geothermal energy e-learning platform, http://ehydrocity.eu/, EEA Financial Mechanism
- 2014-2017 SNOWBALL Remote sensing, model and in-situ data fusion for snowpack parameters and related hazards in a climate change perspective
- 2013-2016 GEOIDEA.ro GEodata Openness Initiative for Development and Economic Advancement in ROmania, Funded by SNSF www.geoidea.ro
- 2015 Current Trends and Approaches in Urban Hydrogeology, EEA Financial Mechanism
- 2013-2015 SIRYS Integrated service for urban subsidence phenomena based on space-borne interferometric synthetic aperture radar (InSAR) and hydrogeological-geotechnical hybrid modeling, Project founded by: European Space Agency
- 2011-2014 TIMBRE An integrated framework of methods, Technologies, tool policies for IMprovement of BRownfield regeneration in Europe - Funded by EU – FP7 - http://timbre-project.eu/



Mineral Waste Valorization into Construction Materials

Main fields of research

- Research and manufacturing construction materials with mineral waste content
- Research and obtaining composite materials for nuclear applications
- Investigation of physical-chemical and mechanical characteristics of construction products with mineral waste content
- Investigation of the technical and environmental characteristics of the mineral wastes and by-products/ (inorganic) industrial waste for assessing their valorization potential
- Assessment of the capacity of composite materials with waste content to immobilize hazardous chemical species





Mineral Waste Valorization into Construction Materials



Strength of Materials "Professor Panaite Mazilu" Dynamic testing of bridge structures





Strength of Materials "Professor Panaite Mazilu" Dynamic testing for civil structures

In situ dynamic tests for composite floors (steel beams with RC slab) of the new headquarters of the National School of Political Studies Bucharest







Strength of Materials "Professor Panaite Mazilu" Destructive tests on steel elements

Checking the steel grade for the materials used in structural elements of a steel structure in Voluntari city, Ilfov county









САМВІ

Advanced Research Center for Ambiental Quality and Building Physics



DEVELOPMENT OF METHODS OF EVALUATION OF IEQ.





Advanced Research Center for Ambiental Quality and Building Physics



DEVELOPMENT OF METHODS OF EVALUATION OF ITQ.



IEQ. MANAGEMENT FOR TERTIARY AND INDUSTRIAL BUILDINGS

Studying air distribution in Operating Rooms and its influence on IFQ.



Here and the second sec

Experimental Study for the Integration of an Innovative Air Irmal mainfilk(Higu)Zstanoin(fortasianse)(130 199566), (pipp)toru, M Dan, I Urcu, A Meslem , pressure drops, acoustic measurements





RESEARCH







Advanced Research Center for Ambiental Quality and Building Physics





IEQ. MANAGEMENT FOR TERTIARY AND INDUSTRIAL BUILDINGS



EXTENSION OF THE WORKS TO VEHICLES AND OTHER CONFINED SPACES

RESEARCH

Ventilation strategies for improving the indoor environment quality in vehicles







- 1.4 Itre engine

RENAULT

- manual ventilation/conditioning system
- three types of discharge grilles: one at the dashboard level directed to the windshield; four grilles that are directed to the passengers from the front part of the vehicle and four discharge grilles that are directed to the legs of both front and the rear passengers



Rear passenger foot









- the new air diffusers were designed in SolidWorks software and manufactured trough rapid prototyping

36



EXTENSION OF THE WORKS TO VEHICLES AND OTHER CONFINED SPACES

RESEARCH

Ventilation strategies for improving the indoor environment quality in vehicles The effect of real velocity distribution

Effect on the boundary conditions on the numerical results – imposing LDV measured velocity fields at the air vents as BC





Advanced Research Center for Ambiental Quality and Building Physics





Advanced Research Center for Ambiental Quality and Building Physics

EXTENSION OF THE WORKS TO VEHICLES AND OTHER CONFINED SPACES

Low momentum PV/DV air diffusion system could deliver fresh humidified air on one or both sides of the head rest cushion of the seat (results from UTCB team)

Main fields of research

Engineering Thermodynamics

Heat and Mass Transfer

Applied Thermal Engineering

- Thermal equipment (heat exchangers, boilers, burners etc.)
- Thermal Building Physics
- Refrigeration, Cryogenic and Heat Pump systems
- Drying & Solar Energy
- Geothermal Energy

Relevant research infrastructure

Thermally controlled room for equipment and systems testing according to SR EN 442-2:2002.

The room is made using sandwich panels with inner copper coils; cooling water is used in order to maintain a constant room temperature.

41

Relevant research infrastructure

H2O-LiBr absorption refrigeration system driven by hot water prepared using a solar collectors system

42

Relevant research infrastructure

Ice-slurry system coupled with a R404A refrigeration system, for the air-loop fan-coil supply

Relevant research infrastructure

Boilers and burners testing system, up to 400 kW for boilers and 300 kW for burners

Climate room for the study of the behavior of products in high/low temperatures and different values of relative humidity

44

Relevant research infrastructure

Oven for fire safety testing for different types of building elements – doors, windows, walls

45

Geothermal Energy

EUROPEAN CENTER OF EXCELLENCE FOR SE EUROPE

Current status of the ECoE plans for Eastern Europe (RGS)

Wo Reinforc

fiberglass wool

insulation

For RGS, the draft MoU is under scrutiny by the UTCB leadership. At present, a new project (GEOPILOT) is being implemented on the university campus, dealing with a GSHP system feeding a nZEB with heating and cooling.

Metallic structure

Living RES Lab!

Geothermal Energy

EUROPEAN CENTER OF EXCELLENCE FOR SE EUROPE

Calibration of the

Preparation of the ground heat

Research laboratory – Technical mechanics

Location: Facultatea de Utilaj Tehnologic- Corpul A ; Calea Plevnei nr. 59; Bucuresti; Sector 1; Head of research teams : Prof.dr.ing. Pavel Cristian Email: <u>cristian.pavel@utcb.ro</u>

Research laboratory - Production technology and machine tools

Location: Facultatea de Utilaj Tehnologic- Corpul H – Sala H6; Calea Plevnei nr. 59; Bucuresti; Sector 1; Head of research teams : Prof.dr.ing. Rece Laurențiu Email: <u>laurentiu.rece@utcb.ro</u>

Research laboratory – Tribology

Location: Facultatea de Utilaj Tehnologic- Corpul H – Sala H7; Calea Plevnei nr. 59; Bucuresti; Sector 1; Head of research teams : Lector.dr.ing. Popovici Ioana Aristia

Email: ioana.popovici@utcb.ro

Research laboratory - Science and technology of materials

Location: Facultatea de Utilaj Tehnologic- Corpul C – Sala C8; Calea Plevnei nr. 59; Bucuresti; Sector 1; Head of research teams : Conf.dr.ing. Florescu Virgil Email: virgil.florescu@utcb.ro

Research laboratory – Hydraulic and pneumatic-Robots

Location: Facultatea de Utilaj Tehnologic- Corpul C – Sala C&; Calea Plevnei nr. 59; Bucuresti; Sector 1; Head of research teams : Lector.dr.ing. Frâncu Cătălin Email: catalin.francu@utcb.ro

Research laboratory - Lifting Machinery

Location: Facultatea de Utilaj Tehnologic- Corpul C – Sala C3; Calea Plevnei nr. 59; Bucuresti; Sector 1; Head of research teams : Lector.dr.ing. Savaniu Ioan Mihail

Email: mihai.savaniu@utcb.ro

Fields:

- Automatization of technological equipment
- Robotization of technological equipment
- Technological
- equipment for construction
- Construction equipment technologies

Geodetic Engineering Measurements and Spatial Data Infrastructures

Geodetic Engineering Measurements and Spatial Data Infrastructures

Implemented projects (selection)

- Works for flood risk reduction in the Prut-Barlad hydrographic basin Project code: SMIS-CSNR 17945 Beneficiary: Romanian Water Administration through the Prut-Barlad Water Basin Administration
- Risk and hazard maps for the Dobrogea Seashore basin
- Specialised surveying assistance in checking the axes of the infrastructure and the position of the shelter during the lifting operations at the final share of the road bridge over the Danube - Black Sea Canal at Cernavoda
- Tracking of the bridge over the Danube channel M. Neagră from Cernavoda, by geodetic methods
- Specialised surveying assistance in verifying the vertical position of the Giurgiu Ruse railway bridge
- Determination of the geometry of the bridge structure over the Black Sea Danube Canal at Cernavoda
- Specialised surveying assistance in designing the infrastructure axes and tracking the superstructure during rotation operations launch of the road bridge over the Danube Black Sea Canal, Cernavoda
- Contract nr. 519/2004 RELANSIN PP6, "Software System for Monitoring of Legal Status of Land Tool for Policy Development in Agriculture, Forestry, Fisheries, Hydrological and Environmental Field"

Ongoing projects

• Harmonization of UAS techniques for agricultural and natural ecosystems monitoring – CA 16219

Roads and Airports

Research Directions

- Laboratory research for establishing the road materials quality laboratory: aggregates, filler, binders, asphalt mixtures;
- Simulation studies by experimental laboratory models for predicting road materials behaviour along time;
- Monitoring on experimental areas the evolution in time – in situ tests
- Researches on new asphalt mixtures used for road and airports structures

Roads and Airports

Space Geodesy, Photogrammetry, Remote Sensing and GIS (GEOS)

- Posiblities to use space technologies (GNSS, SLR/LLR, VLBI) in geodesy;
- Spatial-temporal reference systems in Space Geodesy:

- ✓ coordinate reference systems (ITRS, ETRS, WGS84, etc.);
- ✓ time reference systems (UT, UTC, TAI, GPST etc.);
- ✓ coordinate transformations and conversions;
- ✓ site velocity estimation and time series;
- integration of spatial geodetic networks according to international standards;
- Global Navigation Satellite System (GNSS) applcations in geodesy:
 - design, monumentation, surveying, processing and results interpretation in
 - ✓ international reference geodetic networks realization;
 - international geodetic networks realization;
 - local geodetic networks realization.
- Realization / implementation of GNSS and GNSS augmentation systems in Romania (EUPOS, ROMPOS, EGNOS, GALILEO, BEIDOU);

Geodetic networks

Photogrammetry / Remote sensing

Space Geodesy

Space Geodesy, Photogrammetry, Remote Sensing and GIS (GEOS)

GNSS applications in the study of crustal movements (geodynamic);
 Câmp de viteze cu viteze relative pentru punctele din România (2D - N,E)

- Study of interactions between spatial geodesy and atmospheric physics technologies (determination of status parameters in troposphere and ionosphere or their use in precision positioning and meteorology);
- Applications of spatial geodesy in photogrammetry and other fields (geodetic astronomy, topography, cadastre, navigation, GIS, construction,

- Optimization of geodetic networks;
- Photogrammetry images and technologies / remote sensing and GIS/ applications in cadastre;
- Monitoring the rapid dynamics of environmental changes;
- Monitoring of geomorphological and climatic changes (landslides);

- Monitoring and reporting of pollution in the three environments (soil, water, air);
- Carry out risk maps for natural or man-made disasters;
- Providing updated graphics, city planning and spatial planning projects, to ensure sustainable territorial development.

Space Geodesy, Photogrammetry, Remote Sensing and GIS (GEOS)

DANUBE WATER Project

Comparable geodetic systems for water stages and for the water level observation landmarks:

- Establishment (creation) of a common geodetic system for measuring the levels of the Danube River between Romania and Bulgaria harmonization of the data;
- Surveying of landmarks and development of conversion standards;
- Surveying of all groundwater monitoring points in the project area

- Multi-disciplinary school for PhD studies in Civil Engineering and Mechanical Engineering + (ongoing) Geodetical engineering
- 47 doctoral supervisors
- 276 PhD students
- 30 Specialities

Fundamental sciences in Civil Engineering Structural mechanics Seismic engineering and structural reliability Urban engineering and regional development Buildings Roads, bridges and tunnels Railways Airports Reinforced concrete structures Steel structures Soil mechanics and foundations Water supply and sewage systems Water treatment Waste water treatment Hydraulic works

Reclamation works Hydraulics and fluid mechanics Hydrology, hydrogeology and water management Environmental protection in civil engineering **Building services Construction management** Investment projects management Economics and investment efficiency Indoor air quality Acoustics of buildings and equipments Energy efficiency of buildings and equipments Geodesy, photogrammetry, cartography and teledetection **Thermotechnics** Machineries for constructions Technical mechanics and vibrations

- International dimension
- Co-tutelles (INSA Lyon, Université de la Rochelle, INP de Grenoble, Université Rennes, Université de Liège, Académie Militaire Royale de Bruxelles, Université Montpellier)
- at present 23 foreign PhD students (Iraq, Libya, Algeria, Morocco, Syria, Belgium, Greece, Tunisia, Egypt, France, Turkey)
- Teaching and research in English and French
- UTCB: double diploma Bachelor programme Ecole des Ponts ParisTech France, Université de la Rochelle France, Université de Liège Belgium, INSA Group France

- Academic program -1 semester courses 30 ECTS
- Exemples: some proposed to be delivered in English / online for EU-CONEXUS
- ✓ Academic ethics
- ✓ Management of research projects
- ✓ Scientific writing
- ✓ Physical modelling
- ✓ Mathematical and numerical modelling Applied mathematical modelling for SmUCS
- ✓ Transfer phenomena in built environment
- ✓ Seismic hazard, vulnerabily and risk
- ✓ Geographic information systems

61

- Academic program -1 semester courses 30 ECTS
- Exemples:
- ✓ Risk assessment and management in Hydraulic Engineering
- ✓ Risk sources in Geotechnical engineering
- ✓ Indoor air quality and energy efficiency of buildings
- ✓ Experimental techniques for the quality of built environment
- ✓ Durability of reinforced concrete buildings
- ✓ Technical English
- Academic program -1 semester courses 30 ECTS
- 2 elective disciplines 20 ECTS
- 3 Research reports 70 ECTS
- PhD thesis 60 ECTS, Total 180 ECTS

UTCB Doctoral School Research topics

Structural Mechanics	Experimental analysis, Structural analysis, structural design	Iolanda Craifaleanu	
Seismic Engineering and Building Safety	Seismic Hazard, Site Effects, Seismic Vulnerability, Risk & Resilience, Structural Analysis	Radu Vacareanu / Iolanda Craifaleanu	
Reinforced Concrete Constructions and Materials	Cements, concrete, durability, assessment, strength, methods	Dan Georgescu / Iolanda Craifaleanu / Constatin Voinitchi	
Foundation Engineering	Underground works, soil improvement and reinforcement, deep foundations on- and off-shore, earthquake geotechnical engineering	Loretta Batali / Horatiu Popa	
Urban Engineering and Regional Development	Urban development engineering, Sustainability	Oana Luca	
Environmental Protection in Civil Engineering	Environment Protection, Energy Recovery, Energy Efficiency, Sustainability	Gratiela Tarlea / Ioan Bica / Radu Gogu	
Environmental geotechnics	Natural hazards: landslides, waste management, unsaturated soils, energy geotechnics	Loretta Batali	
Communication Ways, Roads and Airports	Roads, airports, traffic safety, construction materials, pavement design	Carmen Racanel	
Geodesy, Photogrammetry, Cartography and Remote Sensing	Geodesy, photogrammetry, cartography, remote sensing, UAV, geo data processing, GIS	Ana Badea */ Gheorghe Badea* / Caius Didules cu * / * - in cotutelle with Petre Iuliu Dragomir	
Water Supply and Sewerage, Clean and Waste Water Treatement	Water Resources Management, Water supply, Wastewater Treatment, Safety and Risk Related to Water and Hydraulic Systems	Gabriel Racoviteanu	
Hydraulics and Wind Engineering	Hydraulic structures, Fluid Mechanics, Urban and Coastal Wind Engineering	Andrei Georgescu / Radu Gogu / Ioan Bica / Ilinca Nastase	
Hydrology, Hydrogeology and Water Management	Groundwater, surface water, geophysics, urban and coastal hydrogeology, subsurface infrastructure	Radu Gogu / Ioan Bica	

UTCB Doctoral School Research topics

Quality of the Indoor Environment	Air quality, indoor and outdoor pollution, thermal comfort,	Ilinca Nastase / Tiberiu Catalina / Vlad	
	thermal manikins, large scale flows in buildings	lordache / Catalin Teodosiu	
		llinca Nastase / Tiberiu Catalina / Vlad	
Building services	CFD, aeraulics, building simulation, energy efficiency, fire safety	lordache / Catalin Teodosiu / Adrian	
		Ghiaus / Sorin Caluianu	
Acoustics of Buildings and Installations	Noise transfer, acoustics of buildings, acoustics of building services	Tiberiu Catalina / Vlad lordache	
	Farmer afficiency of heildings around he around he	Ilinca Nastase / Tiberiu Catalina / Vlad	
Energy of Buildings and Installations	Energy efficiency of buildings, renewable energy sources,	lordache / Catalin Teodosiu / Adrian	
	bioclimatic solutions, building envelope	Ghiaus / Robert Gavriliuc	
Thermotechnics	Thermodynamics, Heat Transfer, Refrigeration, Heat Pumps,	Adrian Chiaus / Robert Cavrilius	
Themodecinics	Thermal Equipment, Thermal Energy in Buildings	Aurian Ginada / Robert Gavinide	
	Materials, lifting equipment, robotics, automation, technological	Cristian Pavel	
Construction Machinery and Equipment	equipment, sensors, data acquisition		
Technical Mechanics and Vibrations	Vibrations, sensors, data acquisition	Cristian Pavel	

UTCB

- Ilinca NASTASE: <u>ilinca.nastase@utcb.ro</u> Director Doctoral School
- Loretta BATALI : <u>loretta.batali@utcb.ro</u> Director Council for Doctoral Studies

UTCB Doctoral School Doctoral School Conference

Every year, English spoken 2022 – 24.10.2022 – within EU-CONEXUS PhD day

Dr. Frédéric Thevenet is a Professor at IMT Nord Europe (Ecole des Mines de Douai). After a Master degree in Material Science in 2003 from Lyon University, he obtained in 2006 a PhD from Lyon University and Ecole Polytechnique in air treatment processes. He developped green process technologies during a two-year postdoc at CNRS and ARKEMA Co. In 2008 he was recuited as Assistant Professor at Institut Mines Telecom to developp a new research activity dealing with indoor air treatment. He defended his research habilitation

r. Tomasz Cholewa PhD, DSc works at the Lublin University of Technology as

He was a reviewer in many international journals and in EC in topics related to energy efficiency in buildings. He is a professional/licensed engineer (PE) for

Associate Professor. He coordinates a research project about innovative, orecast control of the heating system, which is easily applicable in existing

2020,2021 - online

Ath Conference of the LITCP Dectoral School - 2021

		Program	
	0830 - 0900	Registration on MS Teams	
Opening and Keynote Lectures 09 ⁰⁰ - 09 ²⁰		Chair: Prof. univ. dr. Loretta BATALI, Director of the Council of Doctoral Studies Invited guests: Prof. Radu Văcăreanu – the Rector of UTCB, Prof. Florin Băltăreţu – the Vice Rector for Scientific Research of UTCB Keynote lecture: Thomasz Cholewa - Associate Professor, Lublin University of Technology, Faculty of Environmental Engineering Rationalization of energy consumption in existing buildings: main methodology issues	
	1140 - 1155	Virtual coffee break - with your own coffee 🐵	
Se	ession 1	Chair persons: Catalin Teodosiu and Alaa Rahman	
1	1155 - 1205	Vladimir Kubinyecz and Catalin Teodosiu, Numerical study on smoke evacuation from a curved subway tunnel	
2	1205 - 1215	Mihnea Paunescu, Oana Luca and Andrei Stanescu, The necessity of resilience: Bucharest vulnerability in seismic context	
3	12 ¹⁵ - 12 ²⁵	Mihai Maleanu and Carmen Racanel, Critical parameters for calibration and validation of traffic studies	
4	1225-1235	Enescu Virgil, Functional and Technological Correlations for High Performance Asphalt Batching Plants	
5	1235-1245	Talpiga Mugurel Florin, Draghici Alexandru and Iordache Florin, Heat storage tank functional simulation using neural network	
6	1245-1255	Dounia Chaatouf and Adrian-Gabriel Ghiaus, A critical review of solar dryers with latent and sensible heat storage	
7	12 ⁵⁵ - 13 ⁰⁵	Sabrina Lecheheb and Adrian-Gabriel Ghiaus, Efficiency improvement of parabolic trough solar collector by using nanofluids	
	1305 - 1340	Lunch break or just break 🐵	
Session 2		Chair persons: Adrian Gabriel Ghiaus and Ramona Marcu	
8	1340 - 1350	Naji Ali, Aziz Laith Jawad, Mustatea Sebastian and Chirica Anton, Effect of cavities on the behavior of anchors in sandy soil	
9	1350-1400	Alexandru Matei, Elena Vulpasu and Gabriel Racoviteanu, Use of ion exchange technologies for nitrates removal from water intended for human consumption	
10	1400 - 1410	Alaa Rahman and Radu Drobot, Spatial and Temporal Model Allocation for Water Resources in Irag	

- Theme: New trends in Smart Urban Coastal Sustainability
- hybrid mode

in 2015 on heterogeneous oxidation of VOCs and was promoted Professor from Institut Mines Telecom in 2016. He coordinates the Indoor Air Quality research group at IMT Nord Europe. From a disciplinary point of view, his research activities are focused on heterogeneous physical chemistry.

supervised 12 PhD theses.

buildings.

From an application point of view he works on various processes involving gas-solid interactions in indoor and outdoor environments. He is currently author and co-author of 65 research papers and

designing and supervising on building site in frame of heating, ventilation, air conditioning, water supply. He is Chair of the Polish Chamber of Sanitary Engineers, Region Lublin. His main research topics are related to energy-efficient renovation of existing buildings (especially in field of HVAC), radiant heating/cooling, heat cost allocation in buildings, renewable energy use/integration in

all partners in EU- CONEXUS are invited to join

4th Conference of the UTCB Doctoral

School

București, Romania, November 26, 2021, online

The aim of the conference is to bring together doctoral students and their scientific advisors from the Technical University of Civil Engineering to get to know each other better and to become aware of their presence as a research community. This event is intended to be a good exercise for the doctoral students, who will have the opportunity to present their papers in front of their colleagues and professors, in English. All their papers will be published in non-indexed proceedings.

Submission link

Submission template

UTCB platform for research

🔲 📲 Căutare specialiști UTCB Platfor	× +					o x
\leftarrow \rightarrow C \textcircled{a} http:	https://cdi.utcb.ro				@ ↓	
Universitatea Tehnică de C Centrul de Manager Cercetării, Dezvoltă	Construcții București ment al rii și Inovării				Autentific	are
CENTRUL DE MANAGEMENT AL CERCETĂRII, DEZVOLTĂRII ȘI INOVĂRII CENTRE DE CERCETARE	Căutare specialiști UTCB					
	Puteți căuta specialiști UTCB în baza de date după nume sau după una/mai multe competențe Q Căutare avansată					
	Departament	Laborator	Indice Hirsch Scopus	Domeniu de studiu		
	-Oricare-	-Oricare-		-Oricare-		~
	Centru de cercetare	Indice Hirsch Goole Scholar	Indice Hirsch Web of Science	Domeniu fundamen	tal	
	-Oricare-			-Oricare-		*

UTCB platform for research

	Căutare specialiști UTCB Platfor	× -	Amenajari Hidrotehnice și Gospodarirea Apelor (A.Q.U.A.)	D	
\leftarrow		os:// cdi .	Centrul de Cercetare Avansată în Rezistență Materialelor (C.A.R.E.M.)		
			Centrul de cercetare avansată pentru calitate AMBientală și fizica clădIrilor (C.A.M.B.I.)	F	
Universitatea Tehnică de Construct Centrul de Management a Cercetării, Dezvoltării și In		ement a	Centrul de cercetare in domeniul Ingineriei Structurale, Modelarii Probabilistice a Actiunilor si Estimarii Riscului Structural "profesor Dan Ghiocel" (C.C.D.G.)		
		ării și In	Centrul de Cercetare în Etică Aplicată (C.C.E.A)	are	
			Centrul de Cercetare în Geodezie Spațială, Fotogrammetrie, Teledetecție și G.I.S (G.E.O.S.)		
		C :	Centrul de Cercetare în Ingineria Geotehnică (C.I.G.)		
CENTRUL DE MANAGEMENT AL	La	Centrul de Cercetare in Inginerie Electrica si Iluminat (C.C I.E.L.I.)			
		Centrul de Cercetare pentru matematică și informatică			
CERCETARII, DEZVOLTARII			Centrul de Cercetare pentru sisteme termice (S.I.T.E.R.)		
JI NOVANI	Р	Centrul de Cercetare pentru structuri de beton (C.C.S.B.)			
CENTRE DE CERCETARE			Centrul de cercetare pentru valorificarea deșeurilor minerale în materiale de construcții (V.A.D.E.M.C.)		
			Centrul de Cercetare: Drumuri și aeroporturi		
		-	Centrul de Cercetare: Eficiență Energetică în Clădiri (C.E.E.C.)	_	
			Centrul de Cercetare: Evaluarea Riscului Seismic (C.E.R.S.)		
		-	Centrul de Cercetare: Ingineria apelor subterane (C.IA.S.)	-	
			Centrul de Cercetare: Ingineria echipamentelor tehnologice în construcții		
		Centrul de Cercetare: Măsurători geodezice inginerești și infrastructuri de date spațiale (C.C.M.G.I.I.D.S.)			
		Centrul de Cercetare: Traducere specializată și comunicare interculturală (T.S.C.I.)			
		(-Oricare-	~	•]

UTCB journals for research dissemination

The Modeling in Civil and Environmental Engineering

is an Open Access UTCB journal (since 2005) and covers a wide range of topics from Civil and Environmental Engineering field and is ready to publish high quality standards, state-of the-art, peer-reviewed papers, coming from the academic and research community, and industry as well. MCEE addresses both theoretical developments and practical applications related to Civil and Structural Engineering, Geotechnics and Environmental Science (Soil, Water and Air Pollution, Wastewater Treatment Engineering), Thermal Sciences and Engineering (Thermodynamics, Transport Phenomena, Building Heat & Mass Transfer, HVAC & R), Hydraulic and Wind Engineering, Mechanical and Electrical Engineering in the Built Environment, Automation in Constructions, Roads, Bridges and Railways Constructions, Surveying and Geodesy and any other topics related to constructions and the built environment.

UTCB journals for research dissemination

RAILWAYS

GEOTECHNICS

ROMANIAN JOURNAL **OF TRANSPORT INFRASTRUCTURE**

TECHNICAL UNIVERSITY OF CIVIL ENGINEERING OF BUCHAREST

ROADS BRIDGES

CONSPRESS ISSN 2286-2218 ISSN-L 2286-2218

Romanian Journal of Transport Infrastructure

https://sciendo.com/journal/RJTI

Web of Science since 2016

UTCB journals for research dissemination

Romanian Journal of Mathematics and Computer Science

Members of Mathematics & Computer Science Research Center are active involved in the Editorial board of *Romanian Journal of Mathematics and Computer Science*.

The journal was established in 2011 with the aim of serving mathematicians around the world to publish quality research articles.

Romanian Journal of Mathematics and Computer Science is indexing and abstracting in: MathSciNet, zbMATH Open, Directory of Open Access Journals (DOAJ), Google Scholar.

Thank you!

info@eu-conexus.eu

www.eu-conexus.eu