



22nd INTERNATIONAL SYMPOSIUM **“THE ENVIRONMENT AND THE INDUSTRY”**

PROGRAMME

Bucharest, Romania
September 26-27, 2019

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CITATION INDEX-SCIENCE**



2015, 2016, 2017, 2018 Symposium Proceedings are indexed in



22nd INTERNATIONAL SYMPOSIUM – SIMI 2019
“THE ENVIRONMENT AND THE INDUSTRY”

The 22nd International Symposium “Environment and Industry” – SIMI 2019 will be held in Bucharest, at the Ramada Majestic Bucharest Hotel, Romania.

For more info please visit <http://www.ramadamajestic.ro/index.html>



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Organizers
International Symposium
“The Environment and The Industry”
SIMI 2019

under Honorary Patronage of:
Romanian Academy

under Coordination of:
Ministry of Research and Innovation
Ministry of Environment
Ministry of Waters and Forests
Ministry of Economy

Organized by:
National Research and Development Institute for Industrial Ecology – ECOIND

Co—organized by:
Romanian Society of Chemistry
Romanian Water Association
Romanian Environment Association 1998



MINISTERUL CERCETĂRII ȘI INOVĂRII



ACADEMIA ROMÂNĂ



Asociația Română a Apei



INSTITUTUL NAȚIONAL DE CERCETARE-DEZVOLTARE
PENTRU ECOLOGIE INDUSTRIALĂ

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EXCELENȚĂ ÎN CERCETARE ȘI SERVICII DE MEDIU



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Welcome

Dear colleagues and friends,

On behalf of the SIMI 2019 organizing committee, I am honored and delighted to welcome you to the 22-nd International Symposium “The Environment and the Industry”.

As a conference chair of SIMI 2019, I know that the success of the conference depends ultimately on the many people who have worked with us in planning and organizing both the technical program and supporting social arrangements.

In particular, we thank the Program Committee for their thorough and timely reviewing of the papers, and our sponsors who have helped us to keep down the costs of SIMI 2019 for all participants. Recognition should go also to the Organizing Committee members who have all worked extremely hard for the details of important aspects of the conference programs and social activities.

We would like to thank the keynote and plenary speakers, session chairs and the participants, for helping us to build this very exciting conference program. The Organizing and Scientific Committees will make any possible effort to make sure that your participation will be scientifically rewarding.

We welcome you to Bucharest and hope that this year’s conference will challenge and inspire you, and result in new knowledge, collaborations, and friendships.

Ph.D. Chem. Luoana Florentina Pascu
Chair of SIMI 2019

Sponsors



Authorized Distributor



Honorific Committee

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Academy

Acad. Marius Andruh – President of „Chemical Sciences Section” of
the Romanian Academy

Emeritus Prof. Dr. Eng. Sorin Rosca – President of Romanian
Society of Chemistry

Prof.Dr.Eng. Vladimir Rojanschi – President of Romanian
Environment Assoc. 1998

Felix Stroe – President of Romanian Water Association

Emeritus Prof. Dr. Eng. Gheorghita Jinescu (Vice-President of
Romanian Society of Chemistry, Romania)

Organizing Committee

Chair: Ph.D. Chem. Luoana Florentina Pascu (ECOIND, Romania)

Co-Chairman: Ph.D. Eng. Carol Blaziu Lehr (ECOIND, Romania)

Committee Members:

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IT Specialist Leonard Paun (INCD-ECOIND, Romania)

IT Specialist Andrei Tiganus (INCD-ECOIND, Romania)

Scientific Committee

Chair: Ph.D. Chem. Luoana Florentina Pascu (ECOIND, Romania)

Co-Chairman: Ph.D. Eng. Carol Blaziu Lehr (ECOIND, Romania)

Members:

Sustainable Environmental Technologies

Prof. Dr. Asher Brenner (Faculty of Engineering Sciences, Israel)

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Prof. Dr. Eng. Cristina Costache (University Politehnica Bucharest, Romania)

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Prof. Dr. Eng. Mircea Teodorescu (University Politehnica Bucharest, Romania)

Prof. Dr. Giuliano Tevi (Ecological University, Romania)
Dr. Eng. Valentin VLADUT (INMA)

Pollution Assessment and Management System

Prof. Dr. Eng. Ioan Bica (UTC Bucharest, Romania)
SR Dr. Eng. Lucian Constantin (INCD-ECOIND, Romania)
SR Eng. Virgil Criste (INCD-ECOIND, Romania)
Dr. Biol. Stefania Gheorghe (INCD-ECOIND, Romania)
Prof. Dr. Tiago Natal da Luz (Coimbra University, Portugal)
SR Dr. Eng. Carol Lehr (INCD-ECOIND, Romania)
SR Biochem. Irina Lucaciu (INCD-ECOIND, Romania)
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Dr. Robert Raschman (Dekonta, Czech Republic)
Prof. Dr. Eng. Geta Rasnoveanu (University of Bucharest, Romania)
Prof. Dr. Eng. Vladimir Rojanschi (Ecological University, Romania)
Prof. Dr. Daniel Scradeanu (University of Bucharest, Romania)
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SR Eng. Cristian Teodorescu (International Development, Norway)
Asst. Prof. Dr. Özlem Tunç Dede (Giresun University, Turkey)
SR Dr. Eng. Gabriela Geanina Vasile (INCD-ECOIND, Romania)
Dr. Caner Zambak (Environmental Coordinator, Turkish Miners Association, Turkey)

Pollution Control and Monitoring

Prof. Dr. Irinel Adriana Badea (University of Bucharest, Romania)
SR Chem. Elena Bucur (INCD-ECOIND, Romania)
Dr. Marius Bumbac (Valahia University, Romania)
SR Chem. Liliana Cruceru (INCD-ECOIND, Romania)
Acad. Gheorghe Duca (ASRM, Moldova)
Prof. Margarita Filipova (Rousse University, Bulgaria)
SR Dr. Chem. Toma Galaon (INCD-ECOIND, Romania)
Dr. Biol. Stefania Gheorghe (INCD-ECOIND, Romania)
PhD Iryna Koval (Lviv Polytechnic National University, Ukraine)
Prof. PhD. Jean Louis Marty (Perpignan University, France)
Prof. dr. ing. Aurelia Meghea (University Politehnica Bucharest, Romania)
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SR Dr. Biolog. Mihai Nita-Lazar (INCD-ECOIND, Romania)
SR Dr. Chem Luoana Florentina Pascu, (INCD-ECOIND, Romania)
SR Dr. Chem Jana Petre (INCD-ECOIND, Romania)
Prof. Dr. Eng. Gabriel–Lucian Radu (University Politehnica Bucharest, Romania)
Prof. Dr. Lucica Tofan (Ovidius University, Romania)
Prof. Dr. Chem. Luminita Vladescu (University of Bucharest, Romania)



KEYNOTE SPEAKER

Em. O. Prof. Dr. Helmut Kroiss

Education/Academic Background

Civil Engineering at Vienna University of Technology (VUT), Doctoral student and assistant professor at the Institute for Water Quality, Resource and Waste Management from 1972 -84 (chair: Prof. v.d. Emde)

Doctoral thesis: "New treatment technology for Beet Sugar industry waste water"

Habilitation: "Anaerobic waste water treatment"
Occupation/

Occupation/Current Position

Emeritus at the Institute for Water Quality and Resource Management, national and international consultant and lecturer

Functions/Positions within scientific/professional Organizations

Chair and vice-chair of the Institute for water quality, resource and waste management at the faculty of civil engineering (VUT)

Dean of the faculty of civil engineering (VUT)

Vice-chair and member of the Senate of VUT (many years)

President and member of the Board of Directors of Austrian Water and Waste Association

Practical Experience & Expertise

Development of new treatment technologies from lab scale to full scale construction and operation for a variety of industrial and municipal waste water treatment plants; consulting ministries, public authorities, industries, consultants and municipalities,

Consulting ICPDR (International Commission for the Protection of the Danube River) and transboundary water commissions

WWTP operation: development of and teaching at Austrian treatment plant operator training system

Member of the Board of Directors in IAWQ and IWA (2004 to 2016),

President of IWA 2014 to 2016

IWA immediate past president 2016-2018

long term member of EWRA (Europe), WEF (US), DWA (Germany); visiting professor in Sofia/Bulgaria, Singapore, Johor Bahru and Kuala Lumpur (Malaysia University of Technology)

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PLENARY SPEAKER

Prof. Asher Brenner

Actual position

Head of the Environmental Engineering Unit, Faculty of Engineering Sciences, Ben-Gurion University of the Negev Beer-Sheva 8410501, Israel

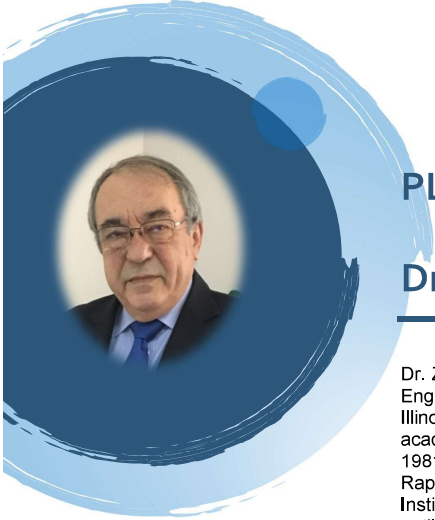
Short Professional Info

Asher Brenner is Professor and chairman of the Environmental Engineering (graduate) program at the Ben-Gurion University of the Negev (BGU), Israel. He received the B.Sc. in Civil Engineering (1979), and then M.Sc. (1982) and D.Sc. (1986) from the Technion (Israel Institute of Technology). From 1986-1988 he has been a research associate with the Department of Civil & Environmental Engineering at the University of Notre Dame, USA. In 1988 he joined Ben-Gurion University, first at the J. Blaustein Institutes for Desert Research, and then since 2000, at the Faculty of Engineering Sciences. During his tenure at BGU, he spent a sabbatical at the Department of Civil & Environmental Engineering – UC Davis (1995-96), and at the Department of Civil & Environmental Engineering – Monash University, Australia (2010). Prof. Brenner's research interests include: biological wastewater treatment, nutrients removal process modeling, industrial wastewater management, stormwater biofiltration, and wastewater reclamation and reuse. He has published more than 80 journal papers and presented numerous papers at international conferences. He has also supervised more than 50 Ph.D. and M.Sc. theses

Research interest

Water technology; biological wastewater treatment; effluents reuse; fate of micropollutants; industrial wastewater management; stormwater harvesting and treatment

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PLENARY SPEAKER

Dr. Caner Zambak

Dr. Zambak, a 1971 graduate of Istanbul Technical University, Mining Engineering Department, has completed his Ph.D. at the University of Illinois at Champaign-Urbana, USA in engineering geology. His academic experience includes Istanbul Technical University until 1981, Kent State University, Ohio, South Dakota School of Mines, Rapid City, South Dakota as an **associate professor** and at Illinois Institute of Technology, Chicago, Illinois as an **adjunct full professor** until 1994.

Dr. Zambak is an engineer with over 48 years of domestic and international academic/professional experience on environmental management policies, industrial waste management, clean-up/remediation of contaminated sites, business/project development in inorganic chemicals production and design projects on engineering geology/geotechnical aspects of open pit mine slope stability/hydrogeology, facility siting of water/waste storage dams, underground structures design and implementation projects.

Dr. Zambak has worked as an associate of Woodward-Clyde Consultants (WCC) to assist USEPA and numerous industry facilities on hazardous waste management, remedial investigations, feasibility studies and remedial design for Superfund projects and geotechnical projects during the 1984-1994 period.

During 1994-2018 period, Dr. Zambak was the Turkish Chemical Manufacturers Association Coordinator of the international Responsible Care® Program on human health&environmental protection, safety and security implementation at facility level.

Currently, he is a standing member of the following organizations:

- **Environmental Coordinator**, Turkish Miners Association
- **Vice-President** of the Balkan Environmental Association (B.EN.A.).
- **MUDEK Accreditation Evaluator of Engineering Programs** in Turkey
- **Environmental Advisor**, Turkish Chemical Manufacturers Association, 1994-2018
- **Vice-Chairman** of Istanbul Chamber of Industry Env. Committee, 1995-2018

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PLENARY SPEAKER

Prof. Eleftheria Psillakis

Actual Position

Professor in Aquatic Chemistry, School of Environmental Engineering, Technical University of Crete, Chania-Crete, Greece

Academic Qualification

E. Psillakis received her degree in Chemistry from the Université Montpellier II, France (1994) with Summa Cum Laude and her PhD from the University of Bristol, U.K (1997). From 2014-2016 she acted as the Deputy Rector of Academic Affairs and Research at the Technical University of Crete. She is currently the Director of postgraduate studies at the School of Environmental Engineering, Technical University of Crete

Research interest

Research activities focus on understanding and applying novel sample preparation methods to the detection of trace amounts of organic pollutants, the environmental fate of organic contaminants in natural or engineered environments and environmental sensors

Scientific Publications / Awards

To date her investigations have resulted in one patent, five book chapters and 80 publications in ISI Journals with more than 5600 citations and an h-index=39. E. Psillakis has received three "Top cited article awards" from ISI journals with a high impact factor. In 2007, she was selected for a Fulbright Research Award and used it at CALTECH, USA. E. Psillakis has given a number of keynote/invited talks and lectures in international conferences and University departments. From 2005-2013, she was a EU expert evaluator for the Marie-Curie excellence fellowships, and in 2012-2013 she acted as the vice-chair of the European chemistry evaluation panel.

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PLENARY SPEAKER

Dr. Elena Rada

Work Experience

Post-doctoral research activity (2006 – present):
University of Trento, Department of Civil Environmental and Mechanical Engineering- DICAM, Trento, Italy, <http://www.unitn.it>
Insubria University, Department of Sciences and Applied Technologies, DiSTA, Varese, Italy, <http://www4.uninsubria.it>

Topics: Research and modeling of environmental issues, safety and reliability in terms of critical exposure to organic pollutants. In particular, odour pollution, human health. Research and modeling of environmental issues, safety and reliability in terms of air pollution and waste management with energy recovery. In particular: Waste selective collection; Municipal solid waste and biomass biodyring; Biostabilization of waste organic fraction; Anaerobic Digestion; Energy recovery from waste; Environmental Impact Assessment; Alternative technologies for sludge treatment; Air pollution and reduction of human exposure to pollutants. Circular economy and waste management

Education and Training

Doctor degree in Power Engineering Sciences (Romania) and Doctor degree in Environmental Engineering (Italy) PhD co-tutelé "Magna cum Laude" (2005) University Polytechnica Bucharest, Romania and University of Trento, Italy
PhD title: „MSW bio-drying before energy valorization”

Master degree Polytechnic University of Bucharest, Romania
Specialisation: The impact of energy production and use on the environment and society
Engineer Degree in Environmental Engineering University Polytechnica Bucharest, Romania
Specialisation: Environmental Engineering in Energy Production and Use sector

Collection Editor: Sustainability Journal Topical Collection: Risk Assessment and Management

Collection Editor: Sustainability Journal Trends in Municipal Solid Waste Management

Guest Editor: Resources Journal Management, Environment, Energy and Sustainability under a Circular Economy

Guest Editor: International Journal of Environmental Research and Public Health. Advances in the Field of Human Health and Environment

Guest Editor: Sustainability Journal Circular Economy and Sustainable Strategies

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PLENARY SPEAKER

Dr. Alina Butu

Actual position

Scientific Director, Head of Biotechnology Department - National Institute of Research and Development for Biological Sciences, Bucharest, Romania

Academic Qualification

PhD in Physics, specialization Biotechnology,
Magna cum laudae – 2005, Faculty of Physics, University of Bucharest, ROMANIA;

Physicist engineer in biotechnology – 1994, Faculty of Physics, University of Bucharest, ROMANIA

Research interest

Microbial and environmental biotechnology: isolation and screening of microorganisms and microbial consortia for accumulation of polluting compounds; practical applications for exploiting the potential of microorganisms for soil, air and water bioremediation; microorganisms useful for biomining - identification of microorganisms involved in the process of metal extraction – bioleaching, bioaccumulation, biooxidation; optimal conditions for cultivation of microorganisms at the laboratory level and micropilot; testing of new culture media using agricultural, industrial and domestic waste for producing microbial biomass.

Bioinformatics: molecular dynamics simulation of biomolecules.

- *Expert evaluator in POS-CCE, POC, PN II and PN III competitions;*
- *Keynote/invited speaker for more than 20 international conferences*
- *Member for over 25 international scientific manifestation committees;*
- *Member of editorial/reviewer committee for over 10 ISI/BDI journals;*
- *Project Director for over 20 projects (5 international) and Member of Research Team for over 45 research projects.*

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PLENARY SPEAKER

Dr. Eugen Gheorghiu

Actual position

Director, International Centre of Biodynamics, Bucharest, Romania

Education

PhD in Theoretical Physics, 1994, Institute for Atomic Physics Bucharest, Romania

Research interest

Modeling & non-invasive analysis of dynamics of living cells and biointerfaces using (coupled) electrical impedance spectroscopy, magnetic & optical e.g. optical waveguides (including SPR) microscopy and bio-affinity assays. The goal is to assess gentle (non-lethal) bioeffects of various stimuli, including environmental ones using time based electro/magneto/optical assays

Fast point-of-care: (A) sensitive identification & quantitation of microbes (bacteria, fungi & viruses) and (B) Antibacterial & Antifungal Susceptibility Testing based on immune-magnetic capture, magnetophoresis and electrical impedance fingerprinting

Assessment of fish dynamics in relation to the quality of their aquatic environment

Synergistic Activities

Co-founder Euroscience and member of Euroscience Governing Board (elected for three mandates)

Expert of European Commission- Evaluator of Proposals on (nano)biosensing (1995-present)

2016-2019: H2020-FET OPEN

2016-2019 Member of ESF College of Expert Reviewers

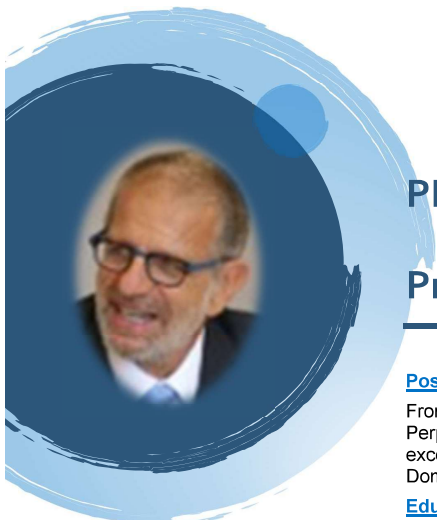
Review Panel member- European Science Foundation – EuroBioSAS (2010-2015)

Member of Selection Committee for European Young Researchers' Award (2010-2016)

Member of Editorial Board of: Physics in Medicine (Elsevier), Journal of Electrical BioImpedance, Romanian Journal of Biophysics

Member of Evaluation Commissions of PhD thesis of: Swinburne University of Technology, Melbourne & University of New South Wales, Sydney, National University of Singapore, Université Catholique de Louvain, Belgium Babes-Bolyai University, Cluj-Napoca & Polytechnic University of Bucharest.

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PLENARY SPEAKER

Prof. Jean Louis Marty

Position

From September 1st 2018: Professor Honorary, Université de Perpignan Via Domitia Until August 31st 2018: Professor "Classe exceptionnelle" in Biotechnology, Université de Perpignan Via Domitia

Education

Doctorat d'Etat, Université de Perpignan Via Domitia, 1987 PhD in Biochemistry, Université de Montpellier, 1980 Engineer in Biochemistry, INSA Lyon 1973

Research

- Stabilization of enzymes and biomolecules and immobilization on various supports;
- Development of enzyme sensors, immunosensors and aptasensors for the detection of pesticides and pollutants in the environment, agro-food and processing control;
- Biosensors in F.I.A. systems;
- Studies of additives for nutraceuticals and functional food;
- Smart packaging

Supervisor of 30 PhD students: 5 French students and 25 foreign students representing 10 nationalities (3 are running)

2018: Guest Editor in the journal Toxins of the special issue entitled "Advanced Sensors for Toxins" 2017: Guest Editor in the journal Sensors of the special issue entitled « Sensors for Toxic and Pathogen Detection»

Member of the Editorial Boards Talanta, Chemosensors, Sensors, Frontiers in Analytical Chemistry, Chemical sensor, The Open Current Process Chemistry Journal, The Open Analytical Chemistry Journal, Journal of Analytical Methods in Chemistry.

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PLENARY SPEAKER

Prof. Ivana Teodorovic

Prof. IVANA TEODOROVIC is working at Faculty of Sciences at University of Novi Sad, Serbia, at the position of full professor of environmental sciences and Head of Laboratory for Ecotoxicology (**LECOTOX**).

Dr Teodorovic is trained as biologist and since 2003 holds PhD in Environmental Sciences. Her research focus is ecotoxicology - mainly aquatic toxicology, prospective and retrospective risk assessment of chemicals. She has participated in a number of internationals (the most recent FP7 Collaborative project **SOLUTIONS**, 2013-2018, focusing on emerging pollutants in water resources) and national research projects (two on-going focusing on water pollutants with EDC properties and their effects on different levels of biological organisation), international ring tests for methods development (**ISO**, **OECD**). From 2016 till 2018 she was a member of the EFSA Scientific Panel for Plant Protection Products and a chair of its WG on TKTD modelling in aquatic ERA.

From 2010 till 2017 she was a member of Serbian expert council for plant protection product authorisation (at Ministry of Agriculture).

Dr Teodorovic has served in boards of a number of professional associations, e.g. **IAD (International Association for Danube Research)** with observer status in ICPDR, **SedNet (European Sediment Network)**, **SETAC (Society of Environmental Toxicology and Chemistry)**. She is a member of core editor team of **IWA journal Water Science and Technology**. A part from reviewing for a number of scientific journals, she has been serving as project proposal evaluator for EU Commission (**MSCA**), Swedish **FORMAS** and Portuguese **FCT**.

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PLENARY SPEAKER

Dr. Jaroslav Slobodnik

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Dr. Jaroslav Slobodnik is the Director of Environmental Institute in Kos, Slovakia.

He has an extensive experience in implementation of the EU water legislation within numerous international projects. Among his specialisations are integrated river basin management and development of monitoring strategies.

In the Black Sea region he was a **Team Leader** of the EU/UNDP EMBLAS-II and, since 2018, its follow up EMBLAS-Plus project.

Since **2001** he was Technical Coordinator of the four basin-wide Joint Danube Surveys organised each six years by the International Commission for the Protection of the Danube River (ICPDR).

As a **member of the advisory panel to the DG Environment of the European Commission** he was involved in drafting institutional reform proposals of the Drinking Water Directive and Water Reuse Regulation.

Since **2008** he is a Chairman of the NORMAN Association – a 'science-to-policy' network of more than 80 organisations in Europe and North America dealing with emerging substances and related issues such as e.g. microplastics.

Since **2010** he is a Topic leader on the Assessment of Chemical Pollution issues in the River Basin Management Plans of all EU Member States.



PLENARY SPEAKER

Prof. Dr. Jacobus (Koos) F van Staden

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Jacobus (Koos) F. van Staden, Director PATLAB has more than 40 years of experience (the majority in project management on international level) in research on process analytical and sensor technology and with various contributions to FIA, SIA, advanced Process systems with PAT with various sensors such as electrochemical, optical (chemiluminescence, fluorescence, Raman, AFM, UV/Vis, NIR) being recognized as pioneer (with various awards), groups still ranked among top research labs with third position in the world, more than 320 peer reviewed international publications.

H-index of 31 (ISI Web of Knowledge, Thomson Reuters), without selfcitations, 2 books and numerous chapters in books, more than 425 presentations at conferences and serves in various positions in international scientific committees.

He received a number of awards e.g. Sasol award and scholarship as student, Robertson award as excellent student, D F du Toit Malherbe-award for his research on FIA, the AECI Gold medal and the Eminent Academic Achievement from the University of Pretoria since 1995 etc.,

He was involved in various projects with various process industries for example with SASOL, pharmaceutical companies, Be Beers, Element 6, Anglo American, Amplats, MINTEK, National Water Research Commission etc in RSA and international where he developed expertise with involvement in Process Intensification, Chemical, Electrochemical and Optical Sensors, Catalysis, Process Technologies, Catalytic Membrane (Bio)Reactors, Automotive Battery Research

Currently he is involved in Research as Senior Researcher 1 and coordinator of Different Projects, Professor with the Status (Supervisor) for PhD Graduates (Currently Supervisor for PhD-students at the Politechnica University of Timisoara and Politechnica University of Bucharest) and as MENTOR for Post Docs and in a number of international organizations. PATLAB already marked some breakthroughs in the EU e.g. **won numerous gold medals and special awards at International and National ProInvents and Innovations Exhibitions since 2009.**

Scientific Program

Day 1, Thursday, September 26, 2019

8⁰⁰-9⁰⁰

Registration of Participants

I.L. CARAGIALE HALL

9⁰⁰-9³⁰

Symposium Opening
Chairs: Luoana Florentina Pascu

**CONSEQUENCES OF THE UN - SDGs ON WATER MANAGEMENT
IN INDUSTRY AND THE ENVIRONMENT**

9³⁰-10¹⁵

Helmut Kroiss
Vienna University of Technology
Institute for Water and Resource Management
Vienna, Austria

**ENGINEERING APPLICATIONS OF
MEMBRANES/GEOSYNTHETICS**

10¹⁵-11⁰⁰

Caner Zambak
Environmental Coordinator, Turkish Miners Association, Turkey
Vice-president, Balkan Environmental Association (B.EN.A.),
canerzambak@gmail.com

**INNOQUA: INNOVATIVE ECOLOGICAL ON-SITE SANITATION
SYSTEM – FULL SCALE DEMONSTRATION**

11⁰⁰-11¹⁵

Costel Bumbac, Elena Elisabeta Manea, Razvan Laurentiu Dinu,
Olga Tiron
National Research and Development Institute for Industrial
Ecology - ECOIND, Bucharest, Romania
costel.bumbac@incdecoind.ro

11¹⁵-11³⁰

Coffee Break

I.L. CARAGIALE HALL

(Session 1)

Chairs: Asher Brenner, Lucian Constantin

**THE USE OF BAUXITE RESIDUE AS AMENDMENT FOR
REHABILITATION THE ACIDIC SOILS. AN OVERVIEW ON A FIVE
STAGES EXPERIMENT**

11³⁰-12⁰⁰ Dobra Gheorghe¹, Iliev Sorin¹, Coteț Lucian¹, Boiangiu Alina¹, Lacatușu Radu², Ionescu Nicolae³, Filipescu Laurențiu⁴
¹Vimetco Alum SA Tulcea, Romania
²INCD-ICPA Bucharest, Romania
³ARD, Station of Albota-Pitesti, Romania
⁴University Politehnica Bucharest, Bucharest, Romania.
alum@alum.ro, office@icpa.ro

**THE FORGOTTEN VARIABLE: LABORATORY WATER PURITY
AND ITS IMPACT ON YOUR EXPERIMENTS**

12⁰⁰-12¹⁵ Ciprian Vatca
Merck Romania SRL, Bucharest, Romania
ciprian.vatca@merckgroup.com

**PLANUP - ALIGNING ROMANIA'S POLICIES TO EU STRATEGIC
PRIORITIES**

12¹⁵-12³⁰ Cristian Teodorescu¹, Loreta Cautes², Beatrice Stefanescu²
¹International Development Norway
christit@gmail.com
²GEC-Bucovina Suceava, Romania

12³⁰-14⁰⁰

Lunch break

I.L. CARAGIALE HALL

(Session 2)

Chairs: Caner Zambak, Mihai Nita Lazar

ADVANCED WASTE WATER TREATMENT

14⁰⁰-14³⁰ Helmut KROISS
Vienna University of Technology
Institute for Water and Resource Management
Vienna, Austria

**INCORPORATION OF AN ANAEROBIC STAGE IN BIOLOGICAL
TREATMENT OF INDUSTRIAL WASTES**

14³⁰-15⁰⁰

Asher Brenner

Unit of Environmental Engineering, Faculty of Engineering Sciences,
Ben-Gurion University of Negev, Be'er-Sheva, Israel,
brenner@bgu.ac.il

**ENVIRONMENTAL RISK ASSESSMENT AND CHEMICALS
MANAGEMENT: THE NORMAN APPROACH**

15⁰⁰-15³⁰

Jaroslav Slobodnik

Director of Environmental Institute in Kos, Slovak Republic,
slobodnik@ei.sk

**TUBULAR REACTORS AS CHEMICAL SENSORS IN THE
ENVIRONMENT AND INDUSTRY**

15³⁰-16⁰⁰

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**APPLICATION OF NEW SYNTHESIZED MATERIALS IN THE
WATER DECONTAMINATION FROM ROSIA MONTANA MINING
AREA (ROMANIA)**

16⁰⁰-16¹⁵

Iolanda-Veronica Ganea^{1,2}, Alexandrina Nan², Iulia Neamtii³,
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Day 2, Friday, September 27, 2019

I.L. CARAGIALE HALL
(Session 3)

Chairs: Alina Butu, Mihai Nita Lazar

**BIOSENSING TOOLS TO QUANTITATIVELY ASSESS THE
QUALITY OF THE AQUATIC ENVIRONMENT**

8³⁰-9⁰⁰

Eugen Gheorghiu

Director, International Centre of Biodynamics, Bucharest, Romania
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**WHAT IS THE BIOSENSOR IMPACT IN THE ENVIRONMENTAL
MONITORING**

9⁰⁰-9³⁰

Jean Louis Marty

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BIOECONOMY - CONCEPTS and TRENDS

9³⁰-10⁰⁰

Alina Butu

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Sciences, Bucharest, Romania
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**IN-BETWEEN CHEMICAL AND ECOLOGICAL STATUS: A
SYSTEMATIC APPROACH TO ASSESS THE ECOLOGICAL
IMPACT OF CHEMICAL POLLUTION ON AQUATIC
ECOSYSTEMS**

10⁰⁰-10³⁰

Ivana Teodorovic¹, Andreas Focks², Thomas Backhaus³, Werner
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**THE COMPARISON OF DESTRUCTION DEGREE
BETWEEN DIFFERENT TYPES OF MICROORGANISMS
UNDER GAS/CAVITATION CONDITIONS**

10³⁰-10⁴⁵

Iryna Z. Koval

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**NEW ECOFRIENDLY BIOLOGICAL MODELS TO ASSESS THE
AQUATIC SYSTEM AT MOLECULAR LEVEL**

10⁴⁵-11⁰⁰

Alina Roxana Banciu, Catalina Stoica, Stefania Gheorghe, Mihai Nita-Lazar
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11⁰⁰-11³⁰

Coffee Break

**I.L. CARAGIALE HALL
(Session 5)**

Chairs: Elefteria Psillakis, Toma Galaon

**LEACHING OF CHEMICALS FROM LITTERED CIGARETTES
AND HEATED TOBACCO STICKS IN WATER: AN
OVERLOOKED ISSUE?**

11³⁰-12⁰⁰

Elefteria Psillakis

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**SOME CONSIDERATIONS ON INDOOR AND OUTDOOR IMPACTS
OF DIFFERENT WAYS OF PM RELEASE AND ODOUR EMISSION
IN INDUSTRIAL SECTORS**

12⁰⁰-12³⁰

Elena Cristina Rada

University of Insubria, Department of Theoretical and Applied Sciences, Varese, Italy
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**ODOUR ASSESSMENT FOR A PIG FARM THROUGH DYNAMIC
OLFACTOMETRY AND AIR DISPERSION MODELLING IN
ORDER TO REDUCE THE ODOUR POLLUTION USING
BIOTECHNOLOGIES**

12³⁰-12⁴⁵

Andrei Vasile^{1,2}, Tanase Gheorghita^{1,2}, Narcisa Babeanu², Ovidiu Popa²

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**THE IMPACT OF CONVENTIONAL TREATED MINE WATER ON
HONDOL RIVER – A PRELIMINARY STUDY OF BENTHIC
INVERTEBRATES’**

12⁴⁵-13⁰⁰

Catalina Stoica¹, Laurentiu Dinu¹, Irina Lucaciu¹, Mihai Nita-Lazar¹
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13⁰⁰-14³⁰

Lunch Break

ACADEMIEI HALL

(Session 4)

Chairs: Gabriela Vasile, Irina Lucaciu

8³⁰-8⁴⁵

**AMMONIA REMOVAL FROM AQUEOUS SYSTEMS BY DIRECT
SONOLYSIS AND CHLORINATION**

Mihai Stefanescu, Valeriu Badescu, Ionut Cristea

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**DIFFERENT METHODS OF CHITOSAN GRAFTING WITH
QUERCETINE AND DETERMINING THE ANTIOXIDANT
ACTIVITY OF SYNTHESIZED COPOLYMERS**

8⁴⁵-9⁰⁰

Maria Gonta, Sirbu Elena, Robu Stefan, Alexandru Gonta
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**REMEDIATION OF POPS POLLUTED SITES IN REPUBLIC
OF MOLDOVA**

9⁰⁰-9¹⁵

Tudor Lupascu, Oleg Bogdevich, Elena Culighin
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FUNCTIONALIZATION OF CHITOSANE WITH POLIFENOLS

9¹⁵-9³⁰

Cristina Ceaciru¹, Maria Gonta¹, Iacob Gutu¹, Mihail Ceaciru¹,
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**FUNCTIONALIZATION OF CHITOSANE WITH CARBOXYL AND
ORGANIC ACIDS**

9³⁰-9⁴⁵

Mihail Ceaciru¹, Maria Gonta¹, Iacob Gutu¹, Cristina Ceaciru¹,
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**EVALUATION OF ACTIVE SLUDGE AND AQUATIC FERNS
USAGE FOR REMOVAL OF ZINC IN A BIOLOGICAL
WASTEWATER TREATMENT SYSTEM**

9⁴⁵-10⁰⁰

Amir Hajjali, Lacramioara Diana Robescu
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**MULTI-FUNCTION BIOSYSTEM BASED ON ARTHROSPIRA
PLATENSIS FOR SPACE APPLICATIONS**

10⁰⁰-10¹⁵

Gabriela Soreanu¹, Igor Cretescu¹, Mariana Diaconu¹, Maria Ignat^{2,3},
Valeria Harabagiu², Corneliu Cojocaru², Petrisor Samoila²
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Academy
³Alexandru Ioan Cuza University, Faculty of Chemistry, Iasi, Romania
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10¹⁵-10³⁰

**CONVERSION OF LIGNOCELLULOSIC AGRICULTURAL
WASTES INTO ADSORBENTS FOR PHARMACEUTICAL DRUGS**

Anca Cruceanu¹, Monica Alexandra Vaideanu¹, Rodica Zavoianu¹,
Elena Bacalum², Octavian, Dumitru Pavel¹

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10³⁰-10⁴⁵

**INVESTIGATION OF SERVICE BRIDGE PIERS LOCATED ON
SPILLWAY AND EFFECTS ON DISCHARGE**

Ali Yildiz, Alpaslan Yarar, Ali İhsan Marti, Öznur Kocaer
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10⁴⁵-11⁰⁰

**A NEW APPROACH TO DETERMINE THE DISCHARGE
PASSING OVER OGEE SPILLWAY**

Alpaslan Yarar, Ali Yildiz, Ali İhsan Marti, Öznur Kocaer
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11⁰⁰-11³⁰

Coffee Break

**ACADEMIEI HALL
(Session 6)**

Chairs: Madalina Arama, Lidia Kim

**VERIFYING COMPLIANCE OF A METALLIC SURFACE
TREATMENT COMPANY WITH BAT REQUIREMENTS, TO
MINIMIZE EMISSIONS OF POLLUTANTS IN WATER**

11³⁰-11⁴⁵

Marius Kovacs, Angelica-Nicoleta Calamar, Lorand Toth, Sorin
Simion, Alexandru Simion
National Institute for Research and Development in Mine Safety and
Protection to Explosion – INSEMEX Petrosani, Hunedoara, Romania
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**THE ORIGIN OF AMMONIUM IN CARBONATED MINERAL
WATERS AND ITS UNDERGROUND TRANSPORT TO ONE
PRODUCTION WELL IN MIDDLE CIUC DEPRESSION FROM
EASTERN CARPATHIANS**

11⁴⁵-12⁰⁰

Olariu Andra¹, Palcu Marin^{2, 3}

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**WASTE MANAGEMENT SYSTEM IN ROMANIA – STATUS AND
DEVELOPMENT FOR BIOECONOMY**

12⁰⁰-12¹⁵

Steliana Rodino¹, Marian Butu², Raluca Ion¹

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Sciences, Bucharest, Romania

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**STRUCTURAL MODEL OF FOREST ECOSYSTEM SERVICES’
PAYMENT FOR WATER QUALITY IMPROVEMENT**

Mariyana Lybenova¹, Alexandre Chikalanov², Yulian Petkov²

12¹⁵-12³⁰

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²University for Library Studies and Information Technologies
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**QUANTIFICATION OF SOME CARDIOVASCULAR COMPOUNDS
AND METABOLITES IN ENVIRONMENTAL WATERS**

12³⁰-12⁴⁵

Vasile-Ion Iancu^{1, 2}, Jana Petre¹, Toma Galaon¹, Gabriel-Lucian
Radu², Roxana Scutariu^{1,2}, Laura Chiriac¹, Diana Puiu¹, Niculescu
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COMPARATIVE TOXICITY EFFECTS OF SOME CLEANING PRODUCTS ON FISH, ALGAE AND CRUSTACEA

Stefania Gheorghe¹, Irina Lucaciu¹, Daniel Mitru^{1,2}, Lucian Ionescu¹, Mihai Nita-Lazar¹

12⁴⁵-13⁰⁰

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IN VITRO SORPTION STUDY OF SOME ORGANOCHLORINE PESTICIDES ON POLYETHYLENE TEREPHTHALATE MICROPLASTICS

Roxana-Elena Scutariu^{1,2}, Diana Puiu¹, Gheorghe Nechifor², Marcela Niculescu¹, Luoana Florentina Pascu¹, Toma Galaon¹

13⁰⁰-13¹⁵

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13¹⁵-14³⁰

Lunch

**I.L. CARAGIALE HALL
CLOSING CEREMONY**

14³⁰-15⁰⁰

Posters Discussions

15⁰⁰-15³⁰

SYMPOSIUM AWARDS

15³⁰-16⁰⁰

OFFICIAL CLOSING

Poster sessions

Day 1, Thursday, September 26, 2019, 8³⁰-14³⁰

8³⁰-14³⁰

SUSTAINABLE ENVIRONMENTAL TECHNOLOGIES

Chairs: Olga Tiron, Gina Catrina

POS1. NEW MATERIALS FOR REMOVING NITRATE, MANGANESE AND IRON FROM GROUNDWATER

Liliana Bobirica, Cristina Modrogan, Constantin Bobirica, Oanamari Daniela Orbulet, Madelene Annette Dancila, Cristina Orbeci
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POS2. ENERGY- SAVING INTEGRATED FERRITISATION TREATMENT OF NICKEL-CONTAINING WASTEWATER

Gennady M. Kochetov, D.M. Samchenko, Bogdan M. Yemchura
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POS3. EXPERIMENTAL STUDY ON USING COMMERCIAL MEMBRANES FOR TREATMENT OF WASTEWATER GENERATED BY COLLAGEN PRODUCTION

Mirela Alina Constantin¹, Lucian Alexandru Constantin¹, Ion Viorel Patroescu¹, Gheorghe Batrinescu¹, Georgiana Dolete²

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POS4. CELLULOSIC MATERIAL DERIVED FROM MAIZE STALK FOR Cu(II) and Fe(III) REMOVAL

Nicoleta Mirela Marin, Gheorghe Batrinescu, Lucian Constantin, Laurentiu Dinu, GinaTraistaru, Mihai Nita - Lazar, Luoana Florentina Pascu, Carol Blaziu Lehr
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**POS5. MEMBRANE PROCESSES FOR REMOVING ORGANIC
POLLUTANTS FROM WASTEWATER**

Ecaterina Anca Serban^{1,2}, Ioana Diaconu², Elena Ruse², Gheorghe Nechifor²
¹National Research and Development Institute for Industrial Ecology - ECOIND,
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² Faculty of Applied Chemistry and Materials Science, University Politehnica Buc
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**POS6. Fe-AI RECOVERY FROM MINE WATER TREATMENT RESIDUALS
AND PRODUCT TESTING FOR WASTEWATER TREATMENT -
PHOSPHATE AND TURBIDITY REMOVAL**

Laurentiu Razvan Dinu¹, Valeriu Robert Badescu¹, Gabriela Geanina Vasile¹,
Ionut Cristea¹, Ecaterina Anca Serban, Voicu Oncu², Marinela Moga²
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**POST. EXPERIMENTAL EVALUATION OF A BIOLOGICAL PRODUCTS'
EFFICIENCY FOR HIGH-LOAD WASTEWATER TREATMENT**

Elena Elisabeta Manea¹, Costel Bumbac¹, Florin Găulea²
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² Renenergetics Decontaminari SRL, Bucharest, Romania
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**POS8. IRON AND MANGANESE INFLUENCE OVER THE NITRIFICATION
PROCESS**

Ioana Ionescu, Mihai Stefanescu, Nicolae Ionut Cristea, Valeriu Badescu, Viorel
Patroescu
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**POS9. STUDY ON BISPHENOL A ANALYSIS FROM WATER SOURCES BY
DERIVATIZATION WITH TRIFLUOROACETIC ANHYDRIDE AND
DETERMINATION BY GC-MS**

Nicolae Ionut Cristea^{1,2}, Lucian Alexandru Constantin¹, Ines Nitoi¹, Mirela Alina
Constantin¹, Mihai Stefanescu^{1,2}, Gheorghe Nechifor²
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**POS10. CONCENTRATION OF COLLAGEN PROTEINS BY
ULTRAFILTRATION COMPARED TO A STANDARD PROTEIN (BSA)**

Roxana-Elena Scutariu^{1,2}, Gheorghe Batrinescu¹, Gheorghe Nechifor², Florinela Pirvu¹, Lucian Constantin¹, Georgiana Dolete³

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**POS11. COAGULATION DIRECT RED DYE AND TEXTILE AUXILIARY
AGENTS IN THE PRESENCE OF FREE FORMALDEHYDE**

Larisa Mocanu, Maria Gonta

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**POS12. SCREENING EXPERIMENTS ON FLUTAMIDE DEGRADATION VIA
TiO₂ ASSISTED PHOTOCATALYSE**

Lucian Alexandru Constantin, Mirela Alina Constantin, Ines Nitoi, Toma Galaon, Ionut Cristea

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**POS13. PERSPECTIVES ON MINIMIZING THE ENVIRONMENTAL IMPACT
OF A COLLAGEN PLANT**

Georgiana Dolete^{1,3}, Lucian Alexandru Constantin², Bianca Maria Tihauan^{1,4}, Laurentiu-Cezar Irimia¹

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⁴University of Bucharest, Faculty of Biology, Bucharest, Romania

POS14. NEW BIOTECHNOLOGICAL MODEL OF BACTERIA MICRO-ALGAE WASTEWATER TREATMENT

Elena Manea, Costel Bumbac, Alina Banciu, Catalina Stoica, Mihai Nita-Lazar
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8³⁰-14³⁰

POLLUTION ASSESSMENT AND MANAGEMENT SYSTEMS
Chairs: Stefania Gheorghe, Iancu Vasile

POS15. ECOLOGICAL ASPECTS OF AGROECOSYSTEMS OF SOYBEAN IN THE CONDITIONS OF THE SOUTH-EAST OF KAZAKHSTAN AT CLIMATE CHANGE

Naziya Suleimenova¹, Margarita Filipova², Elnara Kuandykova¹, Gulnar Orynbasarova¹, Kuanish Zholamanov¹, Kenzhe Erzhanova¹

¹Department of Ecology, Kazakh National Agrarian University, Almaty, Kazakhstan, kzh06@mail.ru

²Department of Ecology and Environmental Protection, University of Rousse, Bulgaria

POS16. CPM AND PERT TECHNIQUES FOR SMALL-SCALE R&D PROJECTS

Marius Simion, Gabriela Vasile, Cristina Dinu, Roxana Scutariu
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POS17. BIOLOGICAL MONITORING USED IN ASSESSMENT OF THE AIR POLLUTANTS

Andreea Cozea, Elena Bucur
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POS18. ASSESSMENT OF HEAVY METALS CONTAMINATION IN GROUNDWATER SOURCES FROM IALOMITA COUNTY

Iuliana Paun, Florentina Laura Chiriac, Florinela Pirvu, Gabriela Vasile, Liliana Valeria Cruceru, Nicoleta Mirela Marin, Marcela Niculescu, Nicoleta Vasilache, Toma Galaon

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POS19. INFLUENCE OF THE pH INDICATOR ON DISSOLVED ORGANIC CARBON FOR DETERMINATION THE HAZARDOUSNESS OF INDUSTRIAL WASTE

Georgiana Cernica¹, Georgeta Madalina Arama¹, Adriana Cuciureanu¹,
Gina Catrina (Traistaru)¹, Diana Stroia²

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POS20. EVALUATION OF ASH RELATED PROBLEMS DURING SEWAGE SLUDGE COMBUSTION

Agnes Serbanescu¹, Mona Barbu¹, Ionut Cristea¹, Gina Catrina¹, Georgiana Cernica¹, Mihai Stefanescu¹, Ioana Bercu²

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POS21. RED MUD VALORIZATION IN ENVIRONMENTAL PROTECTION

Adriana Cuciureanu, Georgiana Cernica, Bogdan Stanescu, Ioana-Alexandra Ionescu

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POS22. THE INFLUENCE OF EMISSION SOURCES ON PARTICULATE MATTER POLLUTION IN ADJACENT AREAS

Valeriu Danciulescu¹, Luoana Florentina Pascu¹, Mihaela Petrescu¹, Andreea Cozea¹, Raluca Diodiu¹, Gheorghita Tanase¹, Maria Pasca²

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POS23. ASSESSMENT OF THE AIR POLLUTION DUE TO COMBUSTION PROCESSES OF DIFFERENT WASTES

Mihai Bratu¹, Luoana Florentina Pascu¹, Mihaela Petrescu¹, Andreea Cozea¹
Maria Pasca²

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POS24. TOXIC EFFECTS OF NON-ACUTE LEAD EXPOSURE ON ANIMAL MODEL

Gheorghita Isvoranu¹, Daniela Ionela Popescu¹, Elena Codrici¹, Simona Mihai¹, Maria Enciu¹, Gina Manda¹, Marco Peretto², Cristiana Tanase^{1,3}

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POS25. ASPECTS OF BIOCIDES PRODUCTS EFFICACY ON DIFFERENT BACTERIAL MODELS

Alina Roxana Banciu¹, Lucian Ionescu¹, Daniela Liliana Ionica¹, Daniel Mitru^{1,2}, Mihai Nita-Lazar¹

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POS26. A. FISCHERI BIOREACTIVITY TOWARD DIFFERENT ANALGESICS

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POS27. INDUCED ENVIRONMENTAL IMPACT OF COMBINED PLASTIC AND PAPER WASTES BEFORE AND AFTER VALORIZATION

Gheorghe Batrinescu¹, Ionut Cristea Nicolae¹, Robert Valeriu Badescu¹, Romeo Cristian Ciobanu², George Andrei Ursan², Mihaela Aradoaei²

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POS28. METHODS OF THE END-USE OF END-OF-LIFE TIRES

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POS29. ULTRA-HIGH STRENGTH STEEL USAGE IN A SEDAN CAR CHASSIS. A THEORETICAL STUDY

Mustafa Ozcanli, Berkay Karacor, M. Atakan Akar, Hasan Serin
Cukurova University, Department of Automotive Engineering, Adana, Turkey
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POS30. RECYCLED COMPOSITE USAGE FOR RACE-CAR WING PRODUCTION: EFFECT OF THE SURFACE ROUGHNESS ON AERODYNAMICS

Mustafa Atakan Akar, Berkay Karaçor, Mustafa Özcanli, Hasan Serin
Cukurova University, Department of Automotive Engineering, Adana, Turkey
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POS31. STUDY OF THE POSSIBILITIES TO REUSE CONSTRUCTION AND DEMOLITION WASTE

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POS32. APPROACHES CONCERNING THE CONCEPTUAL MODEL FOR THE ASSESSMENT OF THE NATURAL FUND VALUES OF THE SOIL AND WATER IN NATURAL PROTECTED ZONES

Bogdan Stanescu, Adriana Cuciureanu, Georgiana Cernica, Gina Alina Catrina
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POS33. HISTORICAL SOIL AND GROUNDWATER POLLUTION IN DEVELOPING PERI-URBAN AREAS

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8³⁰-14³⁰

POLLUTION CONTROL AND MONITORING
Chairs: Laura Chiriac, Alina Banciu

**POS34. THMS FORMATION BY CHLORINATION OF THE
WATER – PARAMETERS AND REACTIONS**

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**POS35. BACTCONTROL - ON LINE ANALYZER FOR WATER
MICROBIOLOGY**

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**POS36. ELECTROCHEMICAL DETECTION OF CYTOSTATICS FROM
WATER**

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POS37. ABSORPTION OF TOTAL PHOSPHORUS BY *LEMNA MINOR* L.

Dorian-Gabriel Neidoni¹, Mihaela Dragalina¹, Valeria Nicorescu¹, Alina Banciu², Catalina Stoica², Mihai Nita-Lazar²

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**POS38. SIMULTANEOUS DETERMINATION OF PROCAINE
HYDROCHLORIDE, PROCAINAMIDE HYDROCHLORIDE AND LIDOCAINE
BY MOLECULAR ABSORPTION SPECTROMETRY**

Nicoleta Mirela Marin, Gheorghe Batrinescu, Mihai Nita-Lazar, Luoana Florentina Pascu, Carol Blaziu Lehr

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**POS39. DETERMINATION OF GLYBURID, GLIMEPIRID AND REPAGLINID
IN WASTEWATER SAMPLES**

Vasile-Ion Iancu^{1, 2}, Gabriel-Lucian Radu², Jana Petre¹, Toma Galaon¹, Roxana
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**POS40. ASSESSMENT OF THE ACCURACY OF ANALYZERS FOR
AUTOMATIC DETERMINATION OF PM₁₀ AND PM_{2.5} PARTICULATE MATTER
IN AMBIENT AIR**

Elena Bucur¹, Radu Motisan², Andrei Vasile¹, Gheorghita Tanase¹, Luoana
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**POS41. GC-MS/MS METHOD FOR TRACE ANALYSIS OF
CHLOROPHOXY ACIDIC HERBICIDES FROM WATER SAMPLES**

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**POS42. OCCURRENCE OF BISPHENOL A AND ITS MAJOR METABOLITE
4-HYDROXYACETOPHENONE IN SOME MUNICIPAL WASTEWATER
TREATMENT PLANTS IN ROMANIA**

Florentina Laura Chiriac, Iuliana Paun, Florinela Pirvu, Vasile Iancu, Alina Tatarus,
Carol Blaziu Lehr, Luoana Florentina Pascu, Toma Galaon

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**POS43. OPTIMIZED METHOD FOR THE DETERMINATION OF ARSENIC,
CADMIUM AND LEAD FROM THE BIOMASS WASTES**

Gina Alina Catrina (Traistaru), Lidia Kim, Luoana Florentina Pascu, Agnes Serbanescu, Georgiana Cernica, Ionut Cristea, Mona Barbu
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**POS44. AEROBIC ULTIMATE BIODEGRADABILITY OF DIFFERENT
DETERGENTS**

Irina Lucaciu¹, Daniel Mitru¹, Stefania Gheorghe¹, Lucian Ionescu¹, Daniela Liliana Ionica¹, Alina Roxana Banciu¹
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**POS45. ALTERNATIVE METHODS TO DETECT BIOLOGICAL
COMMUNITIES IN FRESHWATER SYSTEMS**

Catalina Stoica, Daniela Ionica, Lucian Ionescu, Daniel Mitru, Stefania Gheorghe, Alina Roxana Banciu, Irina Lucaciu, Mihai Nita-Lazar
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**POS46. MONITORING OF ANIONIC AND NON-IONIC SURFACTANTS IN
ACTIVATED SLUDGE SAMPLES**

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**POS47. NEW TOOLS FOR ASSESSMENT OF WASTEWATER QUALITY.
CASE STUDY, ONE RURAL REGION FROM ROMANIA**

Florinela Pirvu^{1,2}, Liliana Cruceru¹, Marcela Niculescu¹, Jana Petre¹, Vasile-Ion Iancu¹, Luoana Florentina Pascu¹, Toma Galaon¹
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POS48. FAST AND SENSITIVE GC-MS/MS METHOD FOR DETECTION OF SOME AUXIN HERBICIDES RESIDUES IN ENVIRONMENTAL SAMPLES

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POS49. PCB CONGENERS OCCURRENCE IN SEWAGE SLUDGE FROM MUNICIPAL WASTEWATER TREATMENT PLANTS IN ROMANIA

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PRESENTATION OF THE COMPANY ALUM SA

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Contact: tel: +4(0)240 535022; fax: +4(0)240 535495; e-mail: alum@alum.ro
www.alum.ro

General information

ALUM SA is the only producer of calcined alumina in Romania, being also the largest alumina producer in South-Eastern Europe. Calcined alumina is used to produce aluminium. At present, the alumina refinery has a production capacity of 600,000 tons of hydrate per year. The alumina produced by the company is delivered both on the domestic market to ALRO SA Slatina, part of the Vimetco Group, as well as on export. On July 1st, 2018, ALUM SA celebrated 45 years since its commissioning (1973). In 1996, the alumina refinery underwent a successfully completed privatization process, the shares of ALUM SA being listed on the Bucharest Stock Exchange since 1997.

The products currently manufactured are: calcined alumina, metallurgical use range, non-metallurgical aluminas: alfa alumina, wet and dry hydrated alumina product as well as crude sodium aluminate.

The raw material, gibbsite bauxite, is purchased from Sierra Leone and this was the only raw material with aluminium content used since 2011 to date. Applied technology is classic Bayer technology, adapted to the specificity of processed bauxite. The secondary product, the bauxite residue, is classified by the environmental authorities as non-hazardous waste and as a result is stored in a special built dump at a distance of 5 km from the production unit.

The upgrading projects started in 2007 have led to a significant increase in overall efficiency, product quality and production capacity, as well as reduced production costs, while placing a particular emphasis on operational safety and employees. Investments covered two major areas: technology and environment. During 2007-2009, ALUM SA Tulcea built its internal gas network and converted the steam boiler and calciner burning systems from the use of fuel oil to the use of natural gas. In addition, the Company has increased the production capacity of the static calciner and purchased and installed equipment for streamlining the technological flow.

In recent years, the technological measures taken have led to an increase of production levels from 450,000 to/year to 550,000 to/year and a decrease in specific consumption as follows:

- reduction of natural gas consumption from ~ 400 m³/to alumina to ~ 290 m³/to alumina;
- reduction of water consumption from 30 m³/to alumina to ~ 7 m³/to alumina;
- reduction of total specific electricity consumption from ~ 400 kW/to alumina to ~ 320 kW/to alumina;
- reduction of hydrate humidity from 10-12 % to max 6 %;
- reduction of sodium content of calcined alumina from ~ 0.5 % to ~ 0.35 %;

All these performances were achieved by investing in high performance equipment and optimizing the specific consumption of bauxite and sodium lye;

From 2019, ALUM SA Tulcea will also produce some sorts of classified, grinded and ungrinded hydrated alumina from the class of special aluminas.

Within the framework of ALUM SA, it has been defined and implemented an integrated management system of quality, environment, health and occupational safety and energy, defined according to SR EN ISO 9001: 2015, SR EN ISO 14001: 2015, SR OHSAS 18001: 2008 and SR EN ISO 50001: 2011.

ALUM SA Tulcea is a member of the national clusters **Magurele High Tech Cluster** and **GoElectric**, as well as the European **Innovation Hub** cluster formed by the European Aluminium Association, in KU Leuven, Belgium. Also, Alum SA Tulcea is part of the consortium of alumina companies in Europe, participating in the European **Remov.AL: Removing the residue disposal from the primary aluminium and other metallurgical sectors**.



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Company milestones

- 1994 - Redox was founded
- 1998 - Redox opened the first warehouse
- 2000 - Signed exclusive distributor agreement with Sigma-Aldrich
- 2003 - Signed exclusive distributor agreement with DAKO
- 2003 - Expand the sales force , warehouse and all the other departments
- 2005 - Obtain ISO 9001:2000 certification
- 2008 - Implement the ERP system in all operations
- 2009 - Finished the new offices and warehouse building
- 2011 - Signed distributor agreement with Eppendorf
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- 2015 - Merck Completes Sigma-Aldrich Acquisition
- 2017 - Start distribution of Merck Millipore products

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For more information please contact:

Merck Romania SRL

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