

SIMI SCIENTIFIC COMMITTEE

Section: Sustainable Environmental Technologies

Dr. Eng. Costel Bumbac

SHORT PROFESSIONAL INFO (maxim 1-2 pages)

Research Scientist 2nd degree within the National Research and Development Institute for Industrial Ecology (INCD-ECOIND), Department of Environmental Technologies and Technological Transfer.

Main activities and responsibilities are: coordination of national / international projects in the field of environmental protection,

experimental studies on environmental biotechnologies: municipal and industrial wastewater treatment; aerobic granular sludge technology; activated algae and granular activated algae for wastewater treatment; waste to biogas technologies; selection of microorganisms for tailored environmental applications; soil bioremediation;



ACTUAL POSITION

Research Scientist – environmental biotechnologies

Project Manager

ACADEMIC QUALIFICATION

2012 - PhD (Faculty of Applied Chemistry and Material Sciences, UPB)

2005- Biotechnology Engineer (Faculty of Biotechnologies, USAMVB)

RESEARCH INTEREST

Water/wastewater/sludge treatment;

Aerobic granular sludge for municipal/industrial wastewater treatment;

Granular activated algae for wastewater treatment and resources recovery;

Groundwater biological treatment in order to reach drinking water quality;

Soil remediation – biological/chemical/smart coupling of chemical and biological treatment:

SCIENTIFIC PUBLICATIONS / AWARDS (selection)

- [1]. Ionescu, I. A.; **Bumbac, C.**; Nita-Lazar, M.; Aerobic granular sludge - Microbial and morphological characterization, JOURNAL OF BIOTECHNOLOGY Volume: 231 Supplement: S (2016),
- [2]. Tiron, O; **Bumbac, C.**, Bioindicators of community structure in microalgae-bacteria processes, JOURNAL OF BIOTECHNOLOGY Volume: 231 Supplement: S, (2016),
- [3]. **Bumbac, C.**; Ionescu, I. A.; Tiron, O.; et al., Continuous flow aerobic granular sludge reactor for dairy wastewater treatment, WATER SCIENCE AND TECHNOLOGY Volume: 71 Issue: 3 Pages: 440-445 (2015)

[4]. Tiron, O.; **Bumbac, C.**; Patroescu, I. V.; et al. Granular activated algae for wastewater treatment, WATER SCIENCE AND TECHNOLOGY Volume: 71 Issue: 6 Pages: 832-839 (2015)

Patent awarded:

RO 129627 B1/2016: Mixed chemical and biological process for remediation of soils polluted with organochlorinated pesticides

Patent applications pending:

- ❖ RO 131327 A0/2016 : Wastewater treatment process based on sulphate precipitation as etringite using recovered aluminum hydroxylates products
- ❖ OSIM nr.A/00420/2016 : Anaerobic process and corresponding bioreactor/digester for the advanced decomposition of high strength organic substrate ;
- ❖ RO 130247/2015: Process for obtaining mixed microalgae-bacteria granules for wastewater treatment ;

International recognition:

- **Gold medal and excellence diploma for the invention RO 130247/2015** “Process for obtaining mixed microalgae-bacteria granules for wastewater treatment“ awarded at The International Exhibition of Research, Innovation and Inventions PRO INVENT, Cluj Napoca, 2015;
- **Gold medal and excellence diploma for the patent RO 129627 B1/2016** “Mixed chemical and biological process for remediation of soils polluted with organochlorinated pesticides” awarded at The International Exhibition of Research, Innovation and Inventions PRO INVENT, Cluj Napoca, 2015;
- **Gold medal for the patent RO 129627 B1/2016** “Mixed chemical and biological process for remediation of soils polluted with organochlorinated pesticides” awarded at Inventions and Innovation Show INVENTIKA, 2014, Bucharest

Member of other Scientific Committees

- IWA-Eastern Europe Young Water Professionals Conferences (2014-Istanbul; 2015 – Belgrade; 2016- Gdansk; 2017 – Budapest);
- International Conference on Environmental and Biological Sciences: (2014, Krabi, Thailanda; 2015 Krabi, Thailanda; 2016 – Osaka, Japonia; 2017 Osaka, Japonia)