



**EUROPEAN FEDERATION OF
BIOTECHNOLOGY**
Section of Environmental Biotechnology

First Meeting of the Section Experts Group

**(5th European Bioremediation Conference, Chania, Greece
MINOA PALACE RESORT & SPA HOTEL, July 8th, 2011)**

Fabio Fava, Spyros Agathos and Valter Tandoi

(Minute of the meeting, November 2011)



Communications

About EFB section “Environmental Biotechnology”

(www.efb-central.org/index.php/Main/section_on_environmental_biotechnology)

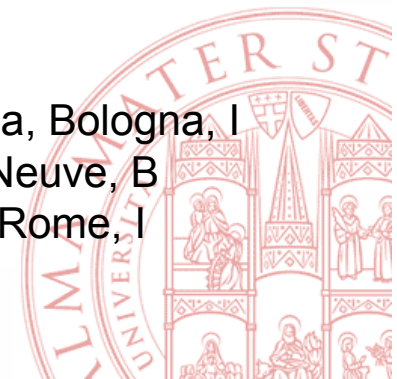
Overall subscribers: ~3300; Active members: ~500 from 30 Countries

Mission:

- To develop the science and engineering aspects of modern environmental biotechnology;
- To identify the most prominent European R&D priorities and stakeholder needs in the area of sustainable bioremediation of contaminated sites and wastewaters, biowaste biorefining, water purification, CO₂ fixation, etc.;
- To promote such R&D and innovation priorities and needs towards European Commission, OECD, European Technology Platforms and other European Agencies dealing with environmental protection and restoration;
- To promote international conferences on Environmental Biotechnology in Europe (and partner Countries) avoiding fragmentation and duplication ;
- To promote Environmental Biotechnology in the national science policies of European Countries.

Governance:

Prof. Dr. Fabio Fava (Chairman), Faculty of Engineering, University of Bologna, Bologna, I
Prof. Dr. Spyros Agathos (Vice Chairman), University of Louvain, Louvain-la-Neuve, B
Dr. Valter Tandoi (Secretariat) CNR, Water Research Institute, Monterotondo, Rome, I



Composition of the Env. Biotech. section Experts Group (a)

Current Group composition; it is open to new Country Delegates

Name	Affiliation	Country
Mauro Majone Alessandro Sidoli	University of Rome Italian Ass. Biotech Industry, Assobiotec	Italy
Ludo Diels Willy Verstraete	VITO, Mol Ghent University	Belgium
Nicolas Kalogerakis Daniel Mamais	Technical University of Crete National Technical University of Athens	Greece
Philippe Corvini Hans Peter Kohler	Univ. Applied Sciences NS MuttENZ EAWAG, Dübendorf	Switzerland
Steven A. Banwart W. Huang	University of Sheffield	United Kingdom
Piet Lens	UNESCO-IHE, Delft	The Netherlands
Victor de Lorenzo	CSIC, Madrid	Spain
Katarina Demnerova Vladimir Brenner	University of Prague AECOM	Czech Republic
Venko Beschkov	Bulgarian Academy of Sciences, Sofia	Bulgaria
Katarina Dercova	Slovak University of Technology	Slovak Republic



Composition of the Env. Biotech. section Experts Group (b)

Current Group composition; it is open to new Country Delegates

Name	Affiliation	Country
Katalin Belafi-Bako	University of Pannonia, Veszprem	Hungary
Maria Reis Bruno Sommer Ferreira	University Nova de Lisboa APBIO, Portuguese Association of Biotech Industries	Portugal
Andreas Loibner	BOKU	Austria
Korneliusz Miksch Jan W Dobrowolski	The Silesian University of Technology, Gliwice AGH University of Science & Technology Krakow	Ponland
Maria Gavrilescu	Gheorghe Asachi Technical University of Iasi	Romania
Thomas Schafer Jens Aamand	Novozymes Geus	Denmark
Rainer Meckenstock Manfred Kircher	Universität Tübingen, Tübingen CLIB2021	Germany
Sara Sjoling	Sodertorn University	Sweden
George O'Malley	BioRefinery Ireland, Newport	Ireland



Composition of the Env. Biotech. section Experts Group (c)

Current Group composition; it is open to new Country Delegates

Name	Affiliation	Country
Vladimir Popov	Russian Academy of Sciences, Moscow	Russia
Fazilet Vardar Sukan	Ege University, Izmir	Turkey
Vladimir Elisashvili	Durmishidze Institute of Biochemistry and Biotechnology, Tbilisi	Georgia
Hector Poggi-Varaldo	CINVESTAV-IPN, Mexico	Mexico
Jose Osvaldo Beserra Carioca	Federal University of Ceará - UFC	Brazil
Hanan Malkawi	Yarmouk University	Jordan
Yasser R Abdel-Fattah	Mubarak City for Scientific Research and Technology Applications	Egypt
Ameur Cherif	Univesity of Tunis	Tunisia
Pedro J. Alvarez	Rice University, Houston, TX	USA



Composition of the Env. Biotech. section Experts Group (d)

Current Group composition; it is open to new Country Delegates

Name	Affiliation	Country
Eugenia Olguin	President of International Society of Environmental Biotechnology (ISEB)	Mexico
Jose Duarte	President of International Association Mediterranean Agroindustrial Waste (IAMAW)	Portugal
Hisao Ohtake	President of Environmental Biotechnology section of the Asian Federation of Biotechnology (AFOB)	Japan
Eliora Ron	General Secretary of European Academy of Microbiology (EAM) & Chair of BAM section of International Union of Microbiological Societies (IUMS)	Israel
Danuta Cichocka	European Commission	OBSERVER
James Philp	OECD	France
Joanna Dupont	EUROPABIO & ETP-SUSCHEM	Brussels



Main objectives of Env. Biotech Experts Group (a)

- To identify the most prominent/emerging European R&D priorities and stakeholder needs in the area of i) water resources preservation, treatment and purification, ii) organic waste treatment and biorefining, iii) sustainable bioremediation of contaminated sites and wastewater, iv) CO₂ and other greenhouse gases fixation and atmospheric reduction, and v) emerging pollutants, etc., to foster sustainable approaches and strategies to environmental impacting activities and to protect and restore (wherever possible) ecosystems;
- To prepare position papers on such priority topics and objectives to promote them towards the major European and National Institutions and Associations supporting research and running policy in environmental monitoring, protection and sustainable restoration, waste, effluents, soil and water management, climatic changes, etc.
- To develop a database with information on previous and major ongoing national and EU R&D projects in the main areas of environmental biotechnology as well as information on the main national and international associations, federations, etc working in the sector by acting as a global observatory of best environmental biotechnology actions, interventions and resources.



Main objectives of Env. Biotech Experts Group (b)

- To align/integrate the identified R&D priorities, needs and policies with those identified by the EU Countries and third Countries but also to anticipate environmental challenges/problems and foster the translation of frontline research into tools and technologies to tackle them;
- To promote international conferences on Environmental Biotechnology in Europe and in partner Countries in close cooperation with ISEB, FEMS, AFOB, other EFB sections, avoiding fragmentation and duplication;
- To organize training for young scientists on the major emerging R&D areas of environmental biotechnology via tailored Summer Schools/exchange programmes (COST actions, etc);
- To promote environmental biotechnology programmes and curricula in European Universities (by also taking advantage of the EU Erasmus Mundus opportunities);
- To recommend protocols for managing environmental threats and disasters via biotechnology tools and strategies to be made available to Governmental Agencies and bodies dealing with environmental protection and restoration.



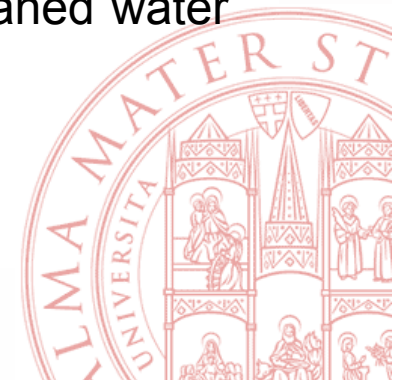
Possible “End Users” for the Env. Biotech Group outcomes

- European Commission (i.e., DG Agriculture, Food, Fisheries and Biotechnology, DG Environment, etc);
- OECD (i.e., Industrial and Environmental Biotechnology task force);
- Joint Programming Initiatives (i.e., Agriculture, Food security and Climate Change..);
- European Technology Platforms (i.e., KBBE ETPs, like SusChem, Biofuels, but also Water Supply and Sanitation Platform;
- European Environment Agency;
- European Industrial Associations, like EuropaBio, CEFIC, etc;
- National Agencies and bodies planning and supporting research and innovation and/or defining policy in environmental monitoring, protection and sustainable restoration, sustainable biowaste management and climate change;
- Universities and associations dealing with training and education and climate tailored professional education, etc;
- Scientific and professional associations of interest for Environmental Biotechnology applications and education



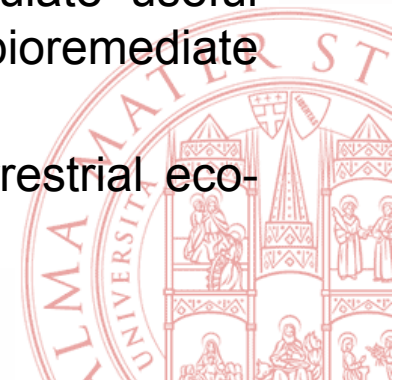
Major and emerging Environmental Biotechnology R&D priorities for Europe and Partner Countries (a)

1. Innovative approaches and tools for the biomonitoring, evaluation of the ecological and health risks, and bioremediation of emerging pollutants (pharmaceuticals, endocrine disruptors, hormones, viruses, toxins, etc) in soils, sediments, groundwater, air, industrial and urban wastewaters, aquaculture effluents, and freshwater and marine ecosystems;
2. Improvement/Intensification of existing sustainable remediation techniques for contaminated sites (mainly *in situ* technologies, i.e., monitored/enhanced natural attenuation, etc) also with the view of the reuse of cleaned matrices/soil for agricultural purpose;
3. Bioremediation/purification of agro-industrial and urban effluents and wastewaters via integrated/intensified, sanitary-safe approaches (i.e., anaerobic/aerobic microbial treatment; nano/photo/chemical and biological treatment), phyto and algal remediation (with exploitation of produced biomass), enzyme-based treatment, bioelectrochemical treatment, etc, and via recovery of nutrients (and their exploitation) and reuse of cleaned water (also in agriculture).



Major and emerging Environmental Biotechnology R&D priorities for Europe and Partner Countries (b)

4. Environmental impacts and fate of biopolymers, nanomaterials and novel materials, e.g. OLED, OPV, etc. as well as those resulting from biorefineries, in terrestrial, freshwater and marine environments;
5. Multipurpose biorefineries for the conversion of surplus, byproducts, waste, effluents of the food processing and agro-industry into biobased chemicals, materials and energy;
6. Microbial fixation of CO₂ and GHGs in soils (to combat climate changes and soil losses/desertification), in sea and in biogeochemical processes (i.e., with algae, cyanobacteria, etc) for fighting climatic change;
7. Exploitation of microorganisms from non conventional environments like desert, deep seas, contaminated sediments
8. Activity mining in environmental metagenomes and development of biological materials and catalysts with NTN (new-to-nature) properties engineered through Synthetic Biology;
9. Exploitation of biogeochemical cycles with the view to accumulate useful minerals in the environment, stabilize toxic heavy metals and bioremediate mining sites and explorations;
10. Modeling the impact of new and old pollutants on important terrestrial ecosystems (sea, lakes, soils) and also climatic change impacts.



Position papers under preparation by the Experts Group

Position papers on the R&D priorities No. 1, 2, 3, 5, 6 and 7 (see previous slides) are under preparation;

A first draft of them will be delivered by November 30, 2011;

Submission of the drafts to the whole experts group for consultation and implementation on December 1st and collection of feedbacks by December 15, 2011. This action will be open to all section subscribers interested in it;

Submission of the revised position papers to the identified “end users” by January 15, 2012.



Future section workshops and conferences (a)



EUROPEAN FEDERATION OF
BIOTECHNOLOGY

Section of Environmental Biotechnology

Environmental Microbiology & Biotechnology in the frame of the Knowledge-Based Bio & Green Economy

April 10-12, 2012

**Faculty of Engineering, *Alma Mater Studiorum*-University of Bologna,
Bologna (Italy)**

<http://www.emb2012.org/>



Future section workshops and conferences (b)



INVITATION



The 5th International Symposium on Biosorption and Bioremediation

25.-28.6.2012

Prague, Czech Republic

The 5th International Symposium on Biosorption and Bioremediation will be held in Prague, 25th-28th June 2012 in cooperation with FEMS, EFB, ESEB and ISEB.

The traditional topics included since 1995, such as heavy metal sorption, biodegradation of recalcitrant organic compounds, biodegradation of oil, phyto- and rhizoremediation and use of GMOs, will be augmented by new sessions dealing with various aspects of microbial ecology in contaminated environments. Special sessions will be devoted to projects like METAGENOMICS in Bioremediation and 7FP project MINOTAURUS.

More information and the first circular will soon be available at the symposium webpage at <http://biobio.vscht.cz> or from symposium chair prof. katerina.demnerova@vscht.cz.



Future section workshops and conferences (c)

IAMAW

5-8 th June 2012

1st INTERNATIONAL WORKSHOP*

Of the

**Mediterranean Agro-industrial Wastes and
Effluents**

Treatment Transformation Valorization

Santarem (Portugal)

**** For pre-registration and information contact:***

Jose.duarte@lneg.pt.

Visit us at: www.iamawaste.org

Future section workshops and conferences (d)

Other initiatives planned for the next year:

15th European Congress on Biotechnology, EFB event. Istanbul, Sept. 23-26, 2012)
<http://www.ecb15.org/> (the active participation of our section is requested)

15th International Biotechnology Symposium (IBS) and Exhibition, “Innovative Biotechnology for Green World and beyond”. September 16 to 21, 2012 in Daegu, Korea. <http://www.ecb15.org/> (the active participation of our section is very welcome)

The proposed strategy:

Major objective: to reduce fragmentation and duplication in Environmental Biotech events in Europe.

The section should promote in EU a large event on bioremediation/environmental biotech every 3 years (the European Bioremediation conference series would be the best candidate for this) and to support/organize 1 or max 2 smaller events per year in different Countries in EU.

EFB can provide promotion and dissemination support (via its website, newsletter and journals). The EFB experts board meets in the frame of these events.

The Environmental biotech section of EFB will closely cooperate with ISEB, FEMS, Asian Federation of Biotechnology and the other EFB sections, in planning the new events on environmental biotech priorities.