



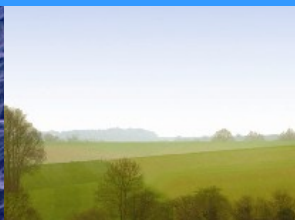
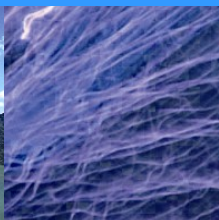
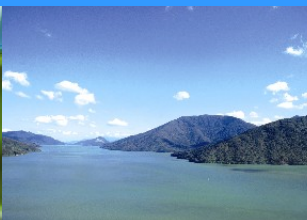
SusChem Italy: **its role, vision and evolution**

28 Ottobre 2009

Nicola Barbini, *Eudermic srl, member of UNIPRO*

Danilo Santoro, *Biophil srl, member of MAPIC and EFfCI*

A European Technology Platform for Sustainable Chemistry



IT SusChem: basics



IT-SusChem was launched on the 23rd October 2006

Secretariat IT-SusChem care of University of Bologna

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IT SusChem Governance



Advisory Board
(under implementation)

Industrial Board
(under implementation)

IT SusChem BOARD

Promoter Committee	Scientific Coordinators
L. Busetto (Coordinator)	G. Centi (Coordinator)
G. Centi	F. Fava
N. Barbini	J. M. Kenny
G. Pieri	E. Santacesaria
P. Tundo	A. Ricci
V. Pignatelli	F. Santarelli
S. Viticoli	G. M. Bonora
F. Cavani	
F. Fava	

Member State Mirror Group

Horizontal Issues
F.Santarelli /G.M.Bonora

Platform Secretariat
A.Di Sandro/ E. Consolini
itsuschem@unibo.it

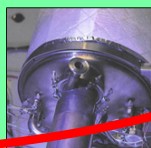
Industrial Biotechnology
F. Fava



Materials Technology
J.M. Kenny



Reaction and Process Design
E. Santacesaria
A. Ricci



IT SusChem Stakeholders



170 Stakeholders

65 Italian Universities and inter-university consortia
64 Industrial Companies and Private Research Laboratories
21 Associations
20 Other Research centers

80 % SMEs – 20 % large companies

Numbers regarding involvement of SMEs vs. large companies

62% Public – 38% Private

Numbers regarding involvement of public vs. private stakeholders

Strategy: national consultation for Industrial Biotechnology (IB)



Universities	Industries & Spin off	Research Centers
Polytechnic of Milano Polytechnic of Torino Polytechnic of Marche University of Bari University of Basilicata University of Bologna University of Cagliari University of Calabria	Agrifutur srl, Alfianello, Brescia Agri2000 Soc. Coop. Bologna Agrolabo S.p.A., Scarmagno, TO AlfaWassermann S.p.A., Bologna Biospehere SpA, Bertinoro (FC) BioDec srl. Casalecchio di Reno (BO) Bioman Srl, Colletterto Giacosa (TO) Biopaint Srl, Colletterto Giacosa (TO)	Center for Biocatalysis & Bioeng. of Macromolecules (NSF) CIRPEB Napoli CNR Bari CNR Istituto di Chimica Biomolecolare, Catania CNR Istituto di Chimica Biomolecolare, Napoli CNR Sesto Fiorentino (FI) CNR, Istituto di Chimica del Riconoscimento Molecolare, Milano Int. Centre for Genetic Eng. & Biotech. (ICGEB)
<p>40 Universities, 30 Companies, 15 Research Centers (CNR, ENEA, C.R.A., etc), several Interuniversity consortia, technology parks and scientific associations participated in the survey.</p> <p>Information on 178 national and European IB projects (over 140 of them of large dimension) along with data on 44 IB national companies were collected.</p>		
University of Padova University of Palermo University of Parma University of Pavia University of Perugia University of Piacenza University of Pisa University of Potenza University of Roma-La Sapienza University of Salerno University of Siena University of Teramo University of Torino University of Trieste University of Verona University of Viterbo	Novamont S.p.A. Novara Phenbiox, Bologna Resindion srl, Binasco (MI) SERECO BIOTEST Perugia Sograf Chemicals srl SPES s.c.p.a, Fabriano (AN) Synbiotec srl, Camerino (MC)	Confederazione Italiana Agricoltori (CIA) Consorzio Nazionale Olivicoltori (CNO) LIBI, Laboratorio Internazionale di Bioinformatica, Bologna Bioindustry Park Canavese spa. Colletterto Giacosa (TO) Parco Tecnologico Padano, Lodi Associazione Biocatalisi e Bioseparazioni ANBI (Associazione Nazionale Biotecnologi Italiani) Interuniversity Consortium INSTM Interuniversity Consortium CIRCC Interuniversity Consortium CIRCMSB Interuniversity Consortium INBB Interuniversity Consortium CIB Consorzio di Ricerche Applicate alla Biotecnologia (CRAB)

Strategy: assessment industrial potential and needs (IB sector)



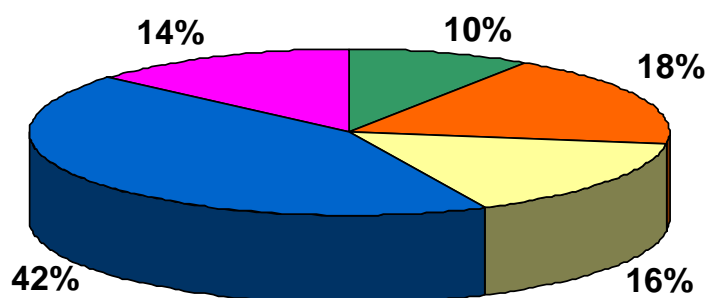
Survey on the IB Industry:

Industries reviewed: 44

70% SMEs, 15% spin-offs;

80% mono-product, with a
R&D employees;

75% in the North Italy.



Strategy: assessment R&D potential of academia (IB sector)



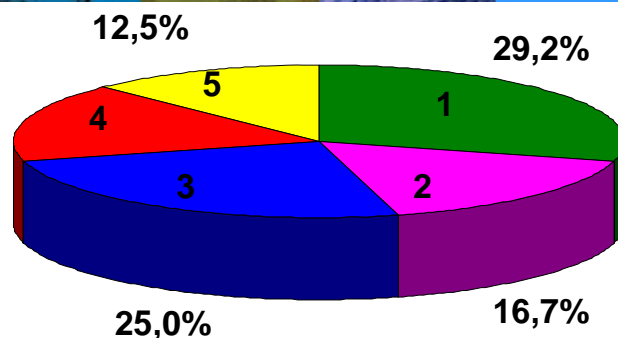
Survey on R&D IB projects

Project reviewed: ~130

16,7%

95% National and 5% EU (COST, LIFE, IP, etc., FP5 and FP6).

80% of national projects financed through public funds (90% from Ministries -via PRIN, FIRB, FISIR, POR, CNR- and 10% from Regions) and 20% through private funds.



- 1) New or improved biocatalysts and/or bioreactors/bioprocess
- 2) New strategies & tolls for the integrated valorization (biorefinery) of biomass and agrofood industry byproducts, wastes, effluents and surplus
- 3) Production of fine-chemicals, metabolites, flavors, heterologous proteins, enzymes, and microbes (including probiotics)
- 4) Biopolymers and fibers from biomass and agrofood industry by-products
- 5) Production of biogas, bioethanol and biodiesel from biomasses and agrofood industry byproducts, wastes, effluents and surplus



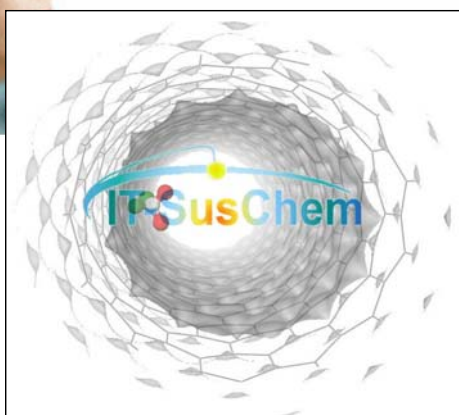
Strategy: identification of R&D priorities for Italy (IB sector)



On the basis of features of the Italian IB sector, the socio-economical needs of the Country and IB R&D priorities identified at the EU level, the IB areas on which future efforts/funds should be focused are:

- A)** development of **new/improved industrial tailored biocatalysts and bioprocesses** to foster the shift of current (chemical) industry towards innovative and/or cleaner, safer, more cost effective productions;
- B)** development of **innovative/improved integrated (bio)processes for valorising national biomass and agro- and food-industry surplus, byproducts, wastes, wastewaters with the integrated production of chemicals, biomaterials and biofuels;**
- C)** development of **new bioprocesses/improvement of existing technologies for biofuels production** from national biomass and agroindustry surplus, by-products, wastes and wastewaters.

IT SusChem: vision document



**Structuring and Planning
Research & Innovation
for a Sustainable
Chemistry in Italy**

Web Site IT-SusChem

www.suschemitaly.it

In the website:

Vision Document in Italian and English
IT-SusChem overview
IT-SusChem brochure
Supporters List IT-SusChem
News
Events
Press Review

A dedicated email: itsuschem@unibo.it

IT-SusChem Newsletter: a monthly email about IT-SusChem and European calls in relationship with IT-SusChem. Sent to more than 700 addresses and events about Sustainable Chemistry

Meetings, events, brokerage



2006/2007

- **Lancio della Piattaforma Nazionale IT- SusChem**, Bologna - 23 October 2006
- **La Chimica Sostenibile nel 7PQ: quali opportunità?**, Milano - 26 February 2007
- **Seminario: Le biotecnologie. Analisi e opportunità di sviluppo per un settore strategico**

2008

2009

- **Finanziamenti regionali e nazionali 2009 per l'Associazione IT-SusChem. Le opportunità per la chimica e le biotecnologie ambientali e industriali**
Novara, 7 maggio 2009
- **SusChem Italy partecipa a ACHEMA 2009**
29. International Exhibition-Congress on Chemical Engineering, Environmental Protection and Biotechnology, Frankfurt am Main, 11 - 15 Maggio 2009
- **World CIA Chimica Industria e Ambiente 2008**, Monaco, 20-23 November 2008
- **Ecomondo 2008**, Rimini Fiera, 5-8 November 2008
- **Ecomondo 2007**, Fiera di Rimini, 7-10 November 2007
- **Industrial Biotechnology International Conference (IBIC)**, Napoli, 8-11 June 2008
- **CIA Chimica - Industria e Ambiente**, Assago Milano, 25-28 October 2007

IT SusChem: activities & main achievements



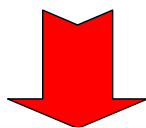
- Participation in the **Polo Innovazione Piemontese Chimica Sostenibile**
- Participates in the ECRN – European Chemical Region (via Provincia di Novara)
- Promotion of **Inter Regional Cooperation initiatives** (Emilia Romagna, Piemonte, Umbria).
- **Affecting National and Regional Strategic R&D Programs** on sustainable chemistry
- Contribution to the alignment of **European Research Funding Systems (i.e. VII FP) and the Italian Systems (National Research Programs)**.
- **Promoting Public and Private Partnerships**
- **Monitoring** of the Public and Private R&D expertise in the Sector
- **Dissemination** activities on bio-based economy at fairs, conferences, etc
- Participation in the **ERANET Industrial Biotechnology (as observer)**
- F Fava participation in **OECD task force Industrial Biotechnology and Environmental Biotechnology** and in the **Ad hoc advisory group on biobased chemicals at the DG Enterprise and Industry (Brussels)**

IT SusChem evolution towards association and SusChem Italy



FEDERCHIMICA
CONFINDUSTRIA

1300 companies
80% SME



To link in a more effective and formal way with Federchimica;
To have a formal institutional organization able to participate in projects.



Emerging Strategic R&D priorities for the Italian KBBE



The integrated biotech valorization
of food industry by-products, waste and effluents
with the sequential integrated production
of phytochemicals and food ingredients
for the food, pharma and cosmetic industry,
and biopolymers and biofuels
for the modern chemical industry.



Is Personal Care a New Priority for IB?



Some Hot Themes

1. How to conjugate new legislations such as REACH and the Animal Testing Ban?
2. How to match request for “green” products with hi-tech?
3. How to prove safety and focus on efficacy?
4. **HOW TO INNOVATE?**

Spotlight on

1. Quick entry to innovation
2. Protect Made-in-Italy by starting from Mediterranean biomasses
3. High added value for kg of by-product
4. Integrality of the biomasses, purified and functionalized in its components

→ Bio-purification and Bio-synthesis: BIOREFINERY

IT SusChem & SusChem Italy



Thank you