

# Bio-chemistry based Information Technology

**Making technology more life-like and intelligent, even if only slightly, can significantly improve systems in most sectors of society.**

The Industrial Revolution automated mass production in factories and the information revolution automated personal information processing by computers. The next large-scale technological revolution will likely involve their integration and decentralization to imitate living systems both for information processing and production. Significant progress towards this integration is now imminent at the nano-bio-info-cogno interface.

Chembio-IT is spearheading a development from the bottom up of ICT-based systems with the living and intelligent properties most current technologies lack, including robustness and resilience, self-repair and adaptation, local intelligence, self-replication and ability to evolve. The potential long-term impact of this emerging and enabling technology will be considerable. This session will present the Chembio-IT vision, status and connection to other cutting edge ICT devices, robotics and software developments.

## **Program, 1102C, 28/09/2010, 16:00-17:30:**

- 16:00 – 16:05 Steen Rasmussen, **Welcome to Chembio-IT** 5 min
- 16:05 – 16:45 **Chembio-IT in a nutshell: Four (4) perspectives** 40 min  
John McCaskill (ECCell, EC project) 10 min  
Martyn Amos (BACTOCOM, EC project) 10 min  
Peter Dittrich (NEUNEU, EC project) 10 min  
Steen Rasmussen (MATCHIT, EC project) 10 min
- 16:45 – 16:55 **Join our Chembio-IT coordination action**, Martyn Amos 10 min  
How to get involved in the newly EC sponsored Chembio-IT Coordination Action:  
COBRA (Coordination Of Biological and Chemical IT Research Activities)
- 16:55 – 17:25 **Panel & Plenum: How to bridge the bio-silicon gap?** 30 min  
Chembio-IT roadmapping: From biochemistry based information processing and –  
production - to cutting edge ICT device and -robotics information processing and –  
production – and back.  
\* Panel:  
Serge Kernback (Micro Robotics)  
Mihaela Ulieru (Manufacturing)  
Gustaf Borghs (ICT Device Physics/Engineering)  
Armin Lambacher (MEMS/neurons)  
Marc Schoenauer (Software & Evolutionary Computing)  
John McCaskill / Martyn Amos / Peter Dittrich (Chembio-IT)  
\* Panel moderator:  
Steen Rasmussen
- 17:25 – 17:30 Steen Rasmussen, **Conclusion and outlook:** 5 min  
A Living Technology Flagship Vision with a central Chembio-IT challenge

Networking event coordinator: **Steen Rasmussen**

Center for Fundamental Living Technology (FLinT)

University of Southern Denmark, steen@ifk.sdu.dk / <http://www.sdu.dk/flint> / +45-6550-4436

[http://ec.europa.eu/information\\_society/events/cf/ict2010/item-display.cfm?id=3526](http://ec.europa.eu/information_society/events/cf/ict2010/item-display.cfm?id=3526)