



International Workshop On Power Supply on Chip



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September 22nd - 24th, 2008

Tyndall National Institute, Cork, Ireland

www.tyndall.ie

In recent years, power supply miniaturisation and reliability concerns are being increasingly addressed by semiconductor companies through their ability to deliver advanced processing and functional integration in the form of system-in-package (SiP) and system-on-chip (SoC) platforms. This proliferation of functionally-integrated hardware solutions can be seen as an inflection point in the power supply industry which is seeing a dramatic move away from traditional power supply manufacturing (with a focus on the assembly of power supply modules or bricks from discrete components) to an increasing emphasis on power supply products deriving directly from semiconductor and microelectronics products and technologies.

A major challenge to the further miniaturisation of DC-DC converters is the inability to integrate passive components on silicon due to their relatively large size at today's operating frequencies of 0.5 to 5 MHz. Increasing the switching frequencies into the 10 to 100 MHz region offers the potential for the reduction of passive component values to the point where, with the right technology, their size becomes compatible with silicon device dimensions. Currently, significant R&D activity is evident in both academia and industry into advances in semiconductor, magnetic, capacitor and packaging material technologies that will deliver products operating at multi-MHz frequencies. The ultimate target is to develop new miniaturised product formats that can be referred to as power supply-in-package (PSiP) and power supply-on-chip (PwrSoC). This concept of integrated power solutions presents a significant disruptive opportunity in power management solutions and warrants an international forum for its discussion and for the elucidation of the key challenges that lie ahead.

The first International Workshop on Power Supply on Chip will bring together the key players in both the industry and academic communities active in this emerging area. Issues to be addressed include the following:

- *System Architectures*
- *Control systems*
- *Converter Topologies*
- *Power Trains*
- *Integrated Capacitors*
- *Integrated Magnetics*
- *Market Opportunities*
- *Power Supply in Package Vs Power Supply on Chip*
- *Packaging / Functional Integration*
- *Materials - Magnetic, Capacitor*

Workshop Format: With a targeted audience of 50 to 100 leading academic and industry experts, a workshop format will present an informal forum for the presentation and discussion of up-to-date trends, results, opportunities and challenges. Most importantly, the workshop format will not require speakers to prepare technical papers, enabling a more open forum for the presentation of state-of-the-art results and data.

General Chair: Gerard Hurley, NUI Galway, Ireland.

Programme Chairs: Cian Ó'Mathúna, Tyndall; Francesco Carobolante, Fairchild Semiconductors

Programme Committee:

Saibal Roy, Tyndall
Arnold Alderman, Anagenesis
Bruno Allard, INSA, Lyon
John Blake, On Semiconductor
José Cobos, UPM, Madrid
Maeve Duffy, NUI Galway
Braham Ferreira, TU Delft
Ray Foley, University College, Cork
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