**MICRO-709  Power management**

Kayal Maher

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**Cursus**

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<th>Microsystèmes et microélectronique</th>
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**Frequency**

Every year

**Remarque**

August 27 to 31, 2018

**Summary**

The objective of this course is to discuss the state-of-the-art in low-power analog and digital system design, with special emphasis on transistor level measures to limit and to control the power dissipation of portable systems.

**Content**

1. DC-DC Converters, Topologies & Control Techniques
2. Converter Modeling and Feedback Loop Design
3. Microprocessor Power Supplies
4. Switched-Capacitor Power Supplies
5. CMOS Linear Regulators, Design and Case Studies
6. Bandgap References
7. Alternative Bandgaps and Applications
8. Battery Charging Techniques & Circuits for Notebook Computers & Cellular Phones
9. Transistor-Level Off-line DC-DC Controller Design
10. Circuit Techniques for Integrated Switching
11. Regulators

**Note**

* Organized by MEAD/EPFL

More informations & registration at:
http://mead.ch/MEADNEW/power-management/
Contact: education@mead.ch

**Keywords**

DC-DC Converters, Power Supplies, Bandgap References

**Learning Prerequisites**

**Required courses**

Basic electronic circuits

**Resources**
Ressources en bibliothèque

• Methodology for the Digital Calibration of Analog Circuits & Systems / Kayal
• Charge-Based MOS Transistor Modeling: The EKV Model for Low-Power and RF IC Design / Enz
• All-Digital Frequency Synthesizer in Deep-Submicron CMOS / Staszewski
• Understanding Delta-Sigma Data Converters / Pavan
• Analog-to-Digital Conversion / Pelgrom
• Analog Design Essentials / Sansen
• Structured Analog CMOS Design / Kayal
• Understanding delta-sigma data converters / Schreier
• RF analog impairments modeling for communication systems simulation: application to OFDM-based transceivers / Smaini