

# Tuesday, June 19<sup>th</sup> PLENARY

9:30 a.m. WELCOME - REGISTRATION

## Filling the Gap from Design to Application

- 10:00 a.m. Leti's Vision: Dr L.Malier, CEA-Leti
- 10:30 a.m. Large-Scale Integrated Photonics for High-Performance Interconnects: Moore's Law for Photonics in High-Performance Data Centers: R.Beausoleil, HP Labs
- 11:00 a.m. Semicon for Power Devices: B. Murari, STM Scientific Advisor
- 11:30 a.m. Semicon for Healthcare: S.Picaud, Institut de la vision
- 12:00 a.m. Semicon for Automotive: D.Griot, DNG Conseil

12:30 a.m. LUNCH

## Modelling the Application Landscape Through Technology

- 2:00 p.m. Energy Management systems: S.Dauvé, CEA-Leti
- 2:20 p.m. Internet of Things: L.Hérault, CEA-Leti
- 2:40 p.m. Optimizing the Brain Computer Interface: Dr D.Lobel, Clinatéc
- 3:00 p.m. Human Machine Interfaces and their Evolutions: S.Cina, CEA-Leti
- 3:20 p.m. BREAK 30'

## Venturing the future with success stories

- 4:00 p.m. Start-ups & Leti, Success & Ambition: Dr L.Malier, CEA-Leti
- 4:20 p.m. APIX: J-P.Braun
- 4:40 p.m. BeSpoon: J-M.André
- 5:00 p.m. Multix: P.Radisson
- 5:20 p.m. Fluoptics: O. Allard & Ph.Rizo

## Closing : 20 years of thinking, 20 years ahead

Since 1992, Soitec built its reputation in generating revolutionary semiconductor materials and strove for leadership in performance and energy efficiency innovation. Soitec technologies are at the heart of today's most critical challenges of energy savings and green energy production that will launch sustainable markets.

5:50 p.m. A-J. Auberton-Hervé, Soitec

6:20 p.m. END

8:15 p.m. **GALA DINNER**  
Restaurant Le Téléphérique, Fort de la Bastille

# Wednesday, June 20<sup>th</sup> MORNING

8:30 a.m. WELCOME COFFEE

## Microelectronics and microsystems components and technologies

Chairman: Simon Deleonibus

AUDITORIUM



The semiconductor business is assimilating Emerging Technologies to face the various scaling challenges or strengthen new applications areas. Sufficient maturity is gained by Nanoelectronics to introduce new architectures featuring neuromimeticism, reconfigurability at a high level with low power consumption or highly integrated sensing. This happens in the frame of a strong demand for energy and its management, such as in automotive or transportation, illustrated here.

- 9:00 a.m. Welcome: Dr S.Deleonibus, CEA-Leti
- 9:10 a.m. Restructuring of Memory Hierarchy in System and No-Standby-Power Nonvolatile Logic with STT-MRAM Technology: Dr. T.Endoh, Univ Tohoku
- 9:40 a.m. Advanced Embedded Memories: B.De Salvo, CEA-Leti
- 10:10 a.m. NEMS from Components Research to Applications: P.Puget, APIX

10:40 a.m. BREAK 30'

- 11:10 a.m. Power Electronic Components for Future Automotives and Mobility: F.Kawai, Toyota Motors
- 11:40 a.m. GaN/Si power electronics : From devices to modules: J-J. Aubert, CEA-Leti

12:10 a.m. LUNCH

8:30 a.m. WELCOME COFFEE

## Advanced IC Design for Green IT

Chairman: Ahmed Jerraya

GRAND SALON



The main driver for semiconductor has moved from only Cost/performance tradeoff, to energy efficiency and extreme miniaturization due to portability and long battery lifetime requirements of mobile computing. To reach the required objectives circuit design solutions need to be aligned with both fabrication technologies and applications. This session introduces key technologies for mastering future generations of system on chips (SoC) that require energy efficient computing, RF and imagers.

- 9:00 a.m. Welcome: Dr A.Jerraya, CEA-Leti
- 9:10 a.m. Green Computing: John Goodcare, ARM
- 9:40 a.m. Evolution of short range communication, NFC and others: B.Charrat, Inside Secure
- 10:10 a.m. 3D Integration for Energy Efficient Computing: D.Dutoit, CEA-Leti

10:40 a.m. BREAK 30'

- 11:10 a.m. Green RF Design: E.Mercier, CEA-Leti
- 11:40 a.m. Going Green With Image Sensors: A.Dupret, CEA-Leti

12:10 a.m. LUNCH

8:30 a.m. WELCOME COFFEE

## Cyber Security

Chairman: Alain Merle

ROOM 222-224



Cybersecurity is a key challenge for the today and future connected world. It is assumed that secure hardware components offer a real improvement for securing more complex systems, from user identification and authentication (e-banking, e-identity), up to computers or mobile devices (Trusted computing). However, even secure components are subject to attacks and security should be continuously improved. This session intends to highlight the key actors needs and to place the CEA-Leti's research works in this perspective.

- 9:00 a.m. Welcome: A.Merle, CEA-Leti
- 9:10 a.m. Cyber security of the armed forces, new threats & new technical issues: G.Poupard, DGA
- 9:40 a.m. Cyber Security, Emerging Threats, Efficient Solutions & Research Challenges: L.Duflot, ANSSI
- 10:10 a.m. Cyber Defence: J-P.Quémard, Cassidian

10:40 a.m. BREAK 30'

- 11:10 a.m. Attacks on Secure Devices: J.Cledière, CEA-Leti
- 11:40 a.m. What's new in secure device protections?: A.Tria, CEA-Leti

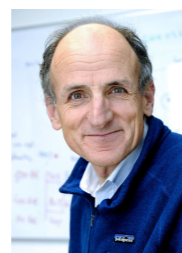
12:10 a.m. LUNCH

# Wednesday, June 20<sup>th</sup> AFTERNOON

## Biomedical

Chairman: Patrick Boisseau

AUDITORIUM



Delivering biological or chemical therapeutics is a major part of medical therapy. It can be envisaged by using delivery systems or delivery devices, ranging from nanoscale to macroscale. New developments in physics, chemistry and engineering enable the design of highly innovative delivery systems or revisit old concepts. This session will cover some of the most significant technological developments or address the next frontiers to deliver innovative therapeutics like small chemical entities, biopharmaceuticals or human cells.

- 2:00 p.m. Welcome: Dr P.Boisseau, CEA-Leti
  - 2:10 p.m. From Therapeutic Molecules to Therapeutic Solutions: P.Ferrara, Sanofi-Aventis
  - 2:40 p.m. Latest Development in Nanodelivery Systems: N.Desai, CelGene
  - 3:10 p.m. Lipidots® lipid nano droplets: Dr I.Texier, CEA-Leti
- 3:40 p.m. BREAK 30'
- 4:10 p.m. Delivery Device for Biotherapies: D.Hoarau, BD-Pharma
  - 4:40 p.m. Microencapsulation of Human Cells: J.Oberholzer, UIC Chicago
  - 5:10 p.m. Micro-Pump for Drug Delivery: Dr R.Campagnolo, CEA-Leti

5:45 p.m. FINAL CONCLUSION: Dr L.Malier, CEA-Leti  
6:00 p.m. END

## Photonics

Chairman: Laurent Fulbert

GRAND SALON



The performance evolution of both telecommunication networks and computing systems requires increasing communication bandwidth at all interconnects levels. Photonic technology is considered as a means to overcome the interconnect bottleneck by utilizing optical links to replace the long metallic wires. This session will review the application roadmaps and the different challenges that silicon photonics is facing in terms of materials, fabrication and packaging.

- 2:00 p.m. Welcome: L.Fulbert, CEA-Leti
  - 2:10 p.m. Optical Interconnection / Polymer Waveguide Integrated Package: H.Yonekura, Shinko
  - 2:40 p.m. Kotura Silicon Photonics, a WDM Approach to Optical Interconnect: J-L.Malinge, Kotura
  - 3:10 p.m. Challenges & Opportunities for Optical Interconnects in Computing: B.Offrein, IBM Zurich
- 3:40 p.m. BREAK 30'
- 4:10 p.m. 3D Integration & Silicon Photonics for Green IT: Dr A.Jerraya, CEA-Leti
  - 4:35 p.m. Silicon Photonics Developments at ST: STMicroelectronics
  - 5:00 p.m. Silicon Photonics, from Design to Circuits: S.Menezo, CEA-Leti
  - 5:10 p.m. Technology Developments for Silicon Photonics: J-M.Fedeli, CEA-Leti

5:45 p.m. FINAL CONCLUSION: Dr L.Malier, CEA-Leti  
6:00 p.m. END

## Smart Systems

Chairman: Céline Soubeyrat

ROOM 222-224



Today, the integration of Smart Systems into our daily lives opens many ways for innovating to the industry: housing, lighting, eHealth, transportations... CEA-Leti has developed methodologies for driving the innovation process from the concept to the product: identification of the sweet spot, integration of the most advanced technologies and support for industrialization. This session will present real life examples of Smart Systems and will, then, focus on one of the most critical challenges: the autonomy of Smart Devices.

- 2:00 p.m. Welcome: C.Soubeyrat, CEA-Leti
  - 2:10 p.m. Transferring Technological Value to SME: Pepite's Model: T.Delhome, CEA-Leti
  - 2:40 p.m. Autonomous Roller Blind: T.Fritsch, Bubbendorf
  - 3:10 p.m. Smart Device for Observance: C.Sivera, INLAB
- 3:40 p.m. BREAK 30'
- 4:10 p.m. Movea® Motion Intelligence Makes Sports and Fitness Fun™: B.Flament, Movea
  - 4:40 p.m. Vibration Energy Harvesting: toward autonomous Wireless Sensor Nodes for Industry: S.Boisseau, CEA-Leti
  - 5:10 p.m. Smart Lighting: A.Lagrange, CEA-Leti

5:45 p.m. FINAL CONCLUSION: Dr L.Malier, CEA-Leti  
6:00 p.m. END