EPoSS Annual Forum 2024

SENSING THE FUTURE OF SMART SYSTEMS: BRIDGING MINDS AND MICROELECTRONICS

JUNE 18–21, 2024 – CORK, IRELAND

Sponsored by

BOSCH Invented for life | CONNECT Networks of the Future | Infineon | INFRACHIP | SPEA | AVL | e·cap | SPINVERSE | VistaMilk | VTT | MEET IN IRELAND / Fáilte Ireland

AGENDA (Status: June, 2024)

Attention: All times of this agenda are shown in Cork local time. Please note the time difference in Ireland if you have saved appointments in Outlook or in other calendars (mobile phones) or whether the entry there contains the correct time format.

Overview

Day	Date	Subject
DAY 0	Tue, June 18	EPoSS Day – EPoSS Members only
DAY 1	Wed, June 19	Annual Forum • Opening, Sessions, Poster Session 1
DAY 2	Thu, June 20	Annual Forum • Sessions, Start-up Award, • Poster Session 2, Company Corner • Site Visits
DAY 3	Fri, June 21	Annual Forum • Sessions, Closing

Congress Address: Tyndall National Institute
Lee Maltings Complex Dyke Parade
Cork, Cork, T12 R5CP, Ireland
http://www.tyndall.ie/

Organised by

EPoSS. European Association on Smart Systems Integration

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Tyndall National Institute Institiúid Náisiúnta

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DAY 0 – Tuesday, June 18, 2024 | EPoSS Day – EPoSS Members only

Time	Subject		
12:00 – 13:00	Registration and Sandwich Lunch		
13:00 – 14:40	**Pack4EU Final Event** connection to MiNaPAD, Grenoble		
13:00 – 13:05	Pack4EU Final workshop - Opening	Jean-Marc Yannou, ASE	
13:05 – 13:30	Semiconductor and packaging landscape in EU amidst a global geopolitical context	Emilie Jolivet, Yole Stefan Chitoraga, Yole	
13:30 – 13:40	European Chips Act – First of a kind fabs, IPCEI and Chips4EU initiative – but what about packaging?	Elisabeth Steimetz, EPoSS / VDI/VDE-IT	
13:40 – 13:45	The European INFRACHIP program	Tony Maindron, Minalogic	
13:45 – 13:50	The PEPR Électronique Packaging Concerted Action	Hugues Granier, LAAS-CNRS, Univ. of Toulouse David Henry, University Grenoble Alpes, CEA	
13:50 – 14:20	Pack4EU project final recommendations	Regis Hamelin, Pack4EU coordinator (Blumorpho)	
	Please note: EPoSS WG/TF start at 14:30.		
14:20 – 14:40	Lab to Fab Accelerators Proposal: a Chiplet Integration Platform	Renaud de Langlade, EPoSS and Chips JU, Board member	
14:40 – 15:00	Coffee Break		
14:30 – 16:45	**EPoSS Working Group / Task Force Meetings / discussion on strategic topics**		
Part 1 14:30 – 15:30	**WG Green ECS** *Chairman: E. Györvary*	**TF EDIH** *Chairman: R. Günzler*	**WG Energy** *Chairman: T. Hammer*

DAY 0 – Tuesday, June 18, 2024 | EPoSS Day – EPoSS Members only

Time	Subject	
15:30 – 15:45	Break	
Part 2 15:45 – 16:45	**WG AgriFood** *Chairmen:* C. Ó Murchú	**in parallel session: Health, ECS SRIA, International Colaboration** (barcamp style: pin board, discussion)
16:45 – 17:00	Break	
17:00 – 18:30	**Executive Committee** *(hybrid)*	
19:30	**EPoSS Executive Committee Evening** *Franciscan Well Brewery & Brewpub* *approx. 7min walk from Tyndall*	

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DAY 1 – Wednesday, June 19, 2024

Time	Subject		
11:00	**Start of Annual Forum 2024**	**09:00 – 11:00**	**EPoSS General Assembly** **EPoSS Members only**
11:00 – 11:30	Registration and Welcome Coffee		
11:30 – 13:00	**Opening Session** *Moderator: Elisabeth Steimetz / Cian O´Murchu*		
11:30 – 11:40	Welcome by Local Host		William Scanlon, CEO Tyndall National Institute
11:40 – 11:50	Welcome by Lord Mayor of Cork		Kieran McCarthy, Lord Mayor of Cork
11:50 – 12:00	Welcome by EPoSS Chairman		Stefan Finkbeiner, CEO Bosch Sensortech
12:00 – 12:20	Chips4EU initiative: Pilot lines, Competence Centers, Design Platform		Pierre Chastanet, Head of Unit "Microelectronics and Photonics Industry", EC
12:20 – 12:40	IDA's perspective on the Technology and Microelectronics Sector in Ireland		Seamus Carroll, Vice President at IDA Ireland
12:40 – 13:00	Microtransfer printing: An enabler for photonic integrated circuits		Brian Corbett, Tyndall National Institute
13:00 – 14:00	Lunch and Networking		
14:00 – 15:00	**Session 1 | Smart Sensing for Future Health Applications** *Chairman: Olivier Horbowy*		
14:00 – 14:15	Sensing smart everywhere – an innovative and comprehensive approach for biometric signals analysis in multiple domains		Ricardo Groppe, Sleep Advice Technologies Srl
14:15 – 14:30	Development of a portable electro-chemical multi-parametric platform		Claudia Ferreira, Tyndall National Institute

DAY 1 – Wednesday, June 19, 2024

Time	Subject	
14:30 – 14:45	Ultra-low Power Wireless Micro dosimetry for In Vivo Verification of Dose Delivery During Radiation Therapy Treatments	Hugh Barnaby, Arizona State University
14:45 – 15:00	Smart textiles for biomonitoring applications: benefiting from printed, textile-based and hybrid technological strategies	Cristina Furtado, CeNTI
15:00 – 16:45	**Poster Session 1 and Coffee** *Chairwoman: Veda Sandeep*	
	Please see appendix for details	
16:45 – 17:00	Break	
17:00 – 18:15	**Session 2 | Bridging Minds for Success Stories: European Collaborations** *Moderator: Erika Györvary*	
17:00 – 17:10	ICOS – Update on "Fundamentals of international cooperation"	Vicky Tröger, VDI/VDE-IT
17:10 – 17:20	The Eureka Cluster Xecs – complementary funding programme to Chips JU	Nadja Rohrbach, AENEAS
17:20 – 17:30	EARASHI, fostering human-centric and sustainable digital transition (AI-Data-Robotics related) in manufacturing	Isabelle Dor, CEA-Leti
17:30 – 17:40	Results from the PENTA-Project TRUST-E on trustable sensor-driven electronic systems for Automotive, other mobility and Industrial Applications	Kai Kriegel, Siemens AG
17:40 – 18:15	Panel Discussion	

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DAY 1 – Wednesday, June 19, 2024

Time	Subject
19:30	**EPoSS Dinner Event** *Restaurant River Lee* *approx. 5 min walk from Tyndall*

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DAY 2 – Thursday, June 20, 2024

Time	Subject	
08:30 – 09:00	Registration and Welcome Coffee	
09:00 – 09:30	**Impulse Talk | Photonic and Electronic Packaging Technologies – the transition from research to manufacturing** *Peter O´Brien, Tyndall National Institute*	
09:30 – 11:15	**Company Corner and Poster Session 2 (Foyer area incl. coffee)** *Chairman: Martin Martens*	
	Please see appendix for details of poster presenter.	
11:15 – 12:15	**EPoSS Start-up Award**	
12:15 – 13:30	Lunch and Networking	
13:30 – 15:00	**Session 3 | Advanced Packaging and Tomorrow's Manufacturing Technologies** *Chairman: Przemek Gromala*	
13:30 – 13:45	X-FAB approaches Advanced Packaging	Tino Jäger, X-FAB MEMS Foundry GmbH
13:45 – 14:00	Digital Printing of Conductive Inks Enabling Advanced Packaging for Smart Systems	Piotr Kowalczewski, XTPL
14:00 – 14:15	Flexible Hybrid Electronics – Heterogenous Integration Enabled by Chip-Film Patch Technology	Ulrike Passlack, IMS CHIPS
14:15 – 14:30	Design guidelines for effective thermal management and electrical design of glass interposers in advanced photonic packages	Parnika Gupta, Tyndall National Institute
14:30 – 14:45	The hybrid structures with optical effects generation with high degree of miniaturization into Reconfigurable Optics Systems	Dimitriu Ulieru, Sitex 45

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DAY 2 – Thursday, June 20, 2024

Time	Subject	
14:45 – 15:00	Ensuring Quality and Efficiency in Production Testing of MEMS Environmental Sensors	Andrea Ganio, SPEA
15:00 – 18:00	**Site Visits** **Tyndall Labs, Tyndall Labs, Dell Technologies, The ASSERT Centre** (University College Cork)	
19:00	**EPoSS Dinner Event & Start-up Award Ceremony** *Restaurant Cork City Gaol* *10min Bus transfer: 19:00 from Tyndall*	

DAY 3 – Friday, June 21, 2024

Time	Subject	
08:30 – 09:00	Registration and Welcome Coffee	
09:00 – 10:30	**Session 4 | Green Smart Systems** *Chairman: Wolfgang Dettmann*	
09:00 – 09:15	State-of-the Art and Future Challenges for Green ECS	Erika Gyoervary, CSEM
09:15 – 09:30	Sustainable fabrication of low environmental impact devices for future green electronics	Daniela Iacopino, Tyndall National Institute
09:30 – 09:45	Combining bio-derived and bio-based materials and additive manufacturing towards electronics with net zero carbon emissions	Valerio Beni, RISE
09:45 – 10:00	Progress towards sustainable Printed Circuit Boards based on Paper	Daniela Collin, Fraunhofer ISC
10:00 – 10:15	SMART CIRCUIT – Circular Innovation Academy	Juan Ignacio Berardi, MicroTEC Südwest e.V.
10:15 – 10:30	Q&A	
10:30 – 11:00	Coffee Break	
11:00 – 12:30	**Session 5 | Smart Energy Solutions** *Chairman: Brendan O'Flynn*	
11:00 – 11:15	Streamlined and Cloud-Connected Open Vehicle Powertrain Platform: Integrating Battery Digital Twins for System-Level Testing	Sajib Chakraborty, Vrije Universiteit Brussel
11:15 – 11:30	Remaining Useful Lifetime Diagnostics in Power Converters: A Review of Sensor and Model Based Prognostic Methods for Lifetime Prediction	Sherif Madkour, Siemens AG

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DAY 3 – Friday, June 21, 2024

Time	Subject	
11:30 – 11:45	Sustainable power delivery by enabling integration of less lossy power inductors close to the processor loads	Ranajit Sai, Tyndall National Institute
11:45 – 12:00	Hierarchical Control for Utility Scale PV-BESS Power Plant – COSTORE Project Case Study	Mohamed Bahloul, Tyndall National Institute
12:00 – 12:15	Microbatteries for use with energy harvesting to power IoT devices	James Rohan, Tyndall National Institute
12:15 – 12:30	Empowering the Future of IoT: Always-On Smart Sensors, Energy Harvesting, and Tiny Machine Learning	Michele Magno, ETH Zürich
12:30 – 13:00	**Annual Forum Closing Session**	
13:00 – 14:00	Lunch and Networking	
14:00	**End of Annual Forum 2024**	

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APPENDIX | Poster Session 1 | Sequence and Themes
DAY 1 – Wednesday, June 19, 2024 ; 15:00 – 16:45

No.	Poster Pitches and Poster Sessions *Chairwoman: Veda Sandeep*	
1	Auction Theory for IoT Networks	Nirmal Wickramasinghe, Maynooth University
2	Automated Insect Pest Monitoring System with Artificial Intelligence on Edge Devices	Amin Kargar, Tyndall National Institute
3	Internet of Things (IoT) based Remaining Useful Lifetime (RUL) Estimation of Power Converters with In-situ Junction Temperature Measurement	Sachin Kumar Bhoi, Vrije Universiteit Brussel
4	Enhanced State Monitoring System for Stationary Smart Batteries with Cloud-Based Digital Twins Synchronization	Omar Hegazy, Vrije Universiteit Brussel
5	EnTICe energy harvesting based WSN (Wireless Sensor Network) testbed	Eoin Ahern, Tyndall National Institute
6	Energy ECS WSN battery life simulation tool	Mario Costanza, Tyndall National Institute
7	Silicon Carbide Power Transistors At the Price Of Silicon	Peter Ward, Tyndall National Institute
8	A Time-Efficient Model for Estimating Far-Field Wireless Power Transfer to Biomedical Implants	Brendan O'Callaghan, Tyndall National Institute
9	AI-Enabled Detection Techniques for Depolarizing Chipless RFID Tags	Nadeem Rather, Tyndall National Institute
10	Development of a novel smart auto injector platform	Ryan Sebastian, Tyndall National Institute
11	Design and prototyping of an enhanced, smart-sensing medical device for a point-of-care improvement on breast disease detection during biopsy	Roger Prat, Tyndall National Institute
12	A complete framework for blood pressure assessment: From data acquisition systems to the development of personalized model for monitoring blood pressure variations	Salvatore Tedesco, Tyndall National Institute
13	Using wearable devices and AI to track the migraine cycle	Caroline Peres da Silva, Tyndall National Institute
14	Wearable Enabled Symptom Assessment Algorithm (WESAA) – a novel remote monitoring solution for people with Parkinson's disease	Colum Crowe, Tyndall National Institute

APPENDIX | Poster Session 2 | Sequence and Themes
DAY 2 – Thursday, June 20, 2024; 09:30 – 11:15

No.	Poster Pitches and Poster Sessions *Chairman: Martin Martens*	
1	The education, training and qualification offer for sustainable electronic	Andreas Middendorf, Frauenhofer FMD
2	Sustainable Materials for IoT Energy Storage	Neil Curtis, Tyndall National Institute
3	The Environmental Impacts of ZED Camera	Priya Sharma, Fraunhofer IWU
4	Piezoelectric MEMS energy harvester for automotive applications	George Muscalu, IMT Bucharest
5	Smart monitoring systems to safeguard the Mediterranean Sea basin	Eric Armengaud, Armengaud Innovate GmbH
6	SME-driven innovation for electronics manufacturing services: improving resilience and circularity through laser-based PCB manufacturing and digitalization of the logistic operations	Eric Armengaud, Armengaud Innovate GmbH
7	Enhancing adaptability and flexibility of Edge AI hardware with Menta eFPGA IP	Nassim Abderrahmane, Menta
8	Edge processing in the factory floor	Natale Testa, STMicroelectronics
9	Additive manufacturing for new generation of MicroLED displays	Nina Szczotka, XTPL WUST
10	Deposition of ultra-thin coatings by a nature-inspired Spray-on-Screen technology	Rachith Shanivarasanthe Nithyananda Kumar, Uhasselt
11	Prognostic and health management of electronic devices combining physics-based and data-driven models	Alessandro Murgia, Sirris
12	SAFETYBOT – Safety Systems for Collaborative Robotics in Industry	Brendan O'Flynn, Tyndall National Institute
13	Integrated Condition Monitoring and Maintenance Optimization for STS Cranes: A Multi-Analytical Approach	Ignacio Gutierrez, Tecnalia
14	Traceability in textile factories	Miguel Monteiro, CeNTI
15	Smart waterproofing textile-reinforced membrane for passable roofs	César Ferreira, CeNTI
16	Smart Hard Hat for construction workers safety and environmental assessment	César Ferreira, CeNTI