

# ISP Workshop on Pulsed Power Generators and Related Technologies

## Workshop Agenda

### Monday, 12 February 2024

**Place:** Aula of Helmut Schmidt University / University of the Federal Armed Forces Hamburg

Holstenhofweg 85, 22043 Hamburg, Germany

**12h00** Registration & Welcome coffee

**13h00** Welcome

Prof. Dr. jur. Magarete Schuler-Harms – Vice-President for Research

E. Spahn – Chairman of the Int. Society on Pulsed Power Applications e.V.

K. F. Hoffmann – Prof. for Power Electronics at the Helmut-Schmidt University

**13h20** Session I – Session chair: Oliver Liebfried

A kHz Repetition Rate Pulse Generator for Driving Direct Current Discharge Plasmas

> Jan Lukas Teichgräber (*Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany*)

Nanosecond Pulse Generator Based on Drift Step Recovery Opening Diodes

> Gregor Loisch (*Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany*)

Test Results of a Fast PFL-Based Kicker Magnet Pulse Generator

> Michael Osemann (*RI Research Instruments GmbH, Germany*)

Commissioning of New BESSY Booster Solid State Kicker Pulser Power Supplies

> Olaf Dreßler (*Helmholtz-Zentrum Berlin, Germany*)

Circuit Simulation Using State Space Modelling and Free Software

> Thorbjörn Sjaenen (*Ostfalia University of Applied Sciences, Germany*)

**15h00** Group photo & coffee break

**Monday, 12 February 2024**

**15h30**    **Session II – Session chair:** Klaus F. Hoffmann

500 kV Pulsed Power Generator Based on a Saturable Pulse Transformer and Off-the-Shelf Semiconductor Opening Switch

> *Mawuena Rémi Degnon (University of Pau, France)*

Solid-State Generators of High-Voltage Nanosecond Pulses Based on Semiconductor Opening Switches

> *Anton Gusev (University of Pau, France)*

The Experimental and Numerical-Simulation Results to Analyze Impact-Ionization Switching of High-Voltage Thyristors

> *Ejlal Shahriari (University of Pau, France)*

Pulsed Streamer Discharges Driven by a 400-kV Compact Marx Generator

> *Chiel Ton (Eindhoven University of Technology, The Netherlands)*

Some Potential Applications of Pulsed Power-Driven Plasma Technology

> *Wilfred Hoebein (Eindhoven University of Technology, The Netherlands)*

Towards a Compact and High Energy XRAM Generator

> *Oliver Liebfried (French-German Research Institute of Saint-Louis, France)*

Batteries and Supercapacitors for Charging an Inductive Pulsed Power Generator

> *Fabian Albrecht (Helmut Schmidt University Hamburg, Germany)*

**17h30**    **End of sessions**

**19h00**    **Dinner at Restaurant Körri Speisekontor,**

Springeltwiete 2, 20095 Hamburg

## Tuesday, 13 February 2024

**Place:** Auditorium (Entry via Bldg 6), DESY Hamburg,  
Notkestraße 85, 22607 Hamburg, Germany

**09h00** ISP member meeting (see Agenda on the next page)

**10h15** Coffee break & Exhibition

**10h45** Lab tour DESY Flash

**13h00** Lunch & Exhibition

**14h00** Session III – Session chair: Gregor Loisch

On the advances of High voltage pulsed generators and related technologies in DERC  
> *Gideon Nimo Appiah (Technology Innovation Institute, United Arab Emirates)*

Research on GaN-HEMT as Fast Switch  
> *Martin Sack (Karlsruhe Institute of Technology, Germany)*

Modelling of GaN HEMTs Using the Grey-Box Method  
> *Ivan Vorotiahin (Karlsruhe Institute of Technology, Germany)*

Recent Research on the Transformer-Coupled LC-Inversion Generator (TCLCG)  
> *Rainer Bischoff (French-German Research Institute of Saint-Louis, France)*

**15h20** Announcement: EAPPC 2024

**15h30** End

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## Agenda of the ISP Member Meeting

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**Tuesday, 13 February 2024 – 9h00 am**

**Place:** Auditorium (Entry via Bldg 6), DESY Hamburg,  
Notkestraße 85, 22607 Hamburg, Germany

1. Welcome and nomination of the secretary (Spahn)
2. Resolution of the agenda
3. Report of the managing committee (Spahn)
4. Current topics (Spahn)
  - a) Website
  - b) Members
  - c) ...
5. Report of the treasurer (Liebfried/Spahn)
6. Report of the cash auditors (Jeroen Oorschot, Claus Strowitzki)
7. Release of the managing committee
8. Election of the cash auditors
9. Resolution of the budget 2024
10. Appointed dates
11. Miscellaneous