https://ieee-pemc2022.org/

SPECIAL SESSION SS1

20th International Power Electronics and Motion Control Conference (IEEE-PEMC 2022) will include Special Sessions, which are organized on highly specialized topics within the conference scope.

Session Details:

Special Session Title: **Reliability of Power Electronic Systems**

Session description (session scope, novelty, goals):	**Keywords, topics:**
Power electronic interfaces are essential for regulating power flow between different voltage levels and frequencies. Several ac/dc and dc/dc converters have been developed for performing this flexible control functionality between various sources and loads. A deeper understanding on the reliability of such converter topologies is important because converter applications such as smart EV charging, wireless power transfer, grid ancillary services, battery energy management systems, e-mobility and intermittent renewable energy sources (wind, PV) can stress the internal power electronic components in very different ways. Thereby, lifetime estimation considering mission profiles with adequate redundancy, modularity an reconfigurability is relevant so that the designed power electronic components comply with the operation life requirements of the larger fault tolerant system.	- multi-levels, high-frequency, multi-ports, isolated/non-isolated and partially-rated converter topologies - solid state transformers - grid connected power electronic application - e-mobility and automotive applications; ships, aerospace and electric vehicle - redundancy, modularity and reconfigurability in power electronic systems - fault tolerant designs - advanced switch technologies (SiC, GaN Devices)

Organizer(s) Details:

First organizer: Aditya Shekhar	
E-mail: a.shekhar@tudelft.nl	**Affiliation: Delft University of Technology, The Netherlands**

Short bio:
Aditya Shekhar is Assistant Professor (Tenure Track) in the field of Reliable Power Electronic Systems in Delft University of Technology since 2021. He completed his Phd in the topic of Reconfigurable DC Links from the same university in 2020. He has 13 Journals and more than 20 conference papers on several research topics such as capacity enhanced medium voltage dc grids, smart charging of electric vehicles, modular multilevel converters, partial discharges in cables, series arc protection in dc micro-grids, wireless EV charging and solar roads.

Second organizer: Pavel Purgat	
E-mail: pavel.purgat@egstonpower.com	**Affiliation: EGSTON Power Electronics, Austria**

Short bio:
Pavel Purgat received the M.Sc. and PhD degrees from the Delft University of Technology in 2016 and 2020 respectively. In 2020, he joined Eaton Industries in Vienna where he developed various solid-state solutions for DC Industry. In 2022 he joined Egston Power Electronics where he is developing a new generation of power hardware in the loop test systems. Pavel Purgat authored and co-authored over 20 scientific publications, 4 patents and served as a technical chair on several international conferences.

Information:

- IEEE IES Rules for Special Sessions organization: https://ieee-pemc2022.org/call-for-special-sessions/