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Newsletter - November 2020

Dear All

Welcome to the second newsletter of the Interreg project PE-Region Platform.

We are still here despite that Covid-19 keeps us from being as visible and out-going as we had hoped for. Fortunately, we have all become more and more familiar with working online - also when it comes to hosting and attending seminars and workshops. This also applies to PE-Region Platform why this newsletter offers a number of upcoming online seminars that might be of interest to you.



Enjoy reading, take care and do not hesitate to contact us if you have any questions or good ideas for future initiatives within PE-Region Platform. You might also find useful information on our homepage www.pe-regionplatform.eu.

Staff News



Please welcome our new co-workers within the PE-Region Platform project team.

Birthe Ritz



Birthe Ritz is supporting Nils Nagler at FhK. Since the summer of 2019, Birthe has been employed as a research engineer in power electronics at Kiel University of Applied Sciences (FhK). Here, she also completed her degree in mechatronics at the Electronic Packaging Laboratory. Before studying mechatronics, Birthe Ritz worked in the field of communication design and she is looking forward to an exciting and productive collaboration within PE-Region Platform.

Claus Skærsholm Kjeldsen



Since 1 September, Claus Skærsholm Kjeldsen is employed as a PhD student under Morten Nymand's supervision and as part of PE-Region Platform. He received his BSc and MSc degrees in electrical engineering from University of Southern Denmark (SDU) in 2016 and 2018, respectively.

Claus' main contribution to the PE-Region Platform project will be in the development of highly efficient compact magnetic components for high frequency high power isolated DC/DC converters. During the past two years, he has worked as a research assistant at SDU in Odense where he has primarily worked on development of magnetic components. His research interests include design, modelling and power loss

calculation of DC/DC converters with special focus on the magnetic components and SiC and GaN semiconductor devices.

Karthik Debbadi



Karthik Debbadi joined the Chair of Power Electronics at CAU Kiel as a PhD student under the supervision of Marco Liserre, funded by the PE-Region Platform project to work on the Demonstrator#2 element 'Innovative Electrical Drive systems'. He completed his master degree from RWTH Aachen in 2016, later he has been working for Raytheon Technologies Research Centre in Ireland as a Research Scientist within power electronic systems in the aerospace domain for approx. 3 years.

Furthermore, two Italian master students (Riccardo Sancio and Francesco Mastrangelo) from Polytechnic of Bari are supporting the activity on the test bench at CAU Kiel for a 3 months' internship. This turns out to be an opportunity for them to learn to work in lab environment during Corona times and also acquire critical skills of working in demanding times with focused tasks.

Milad Moradpour



Since 1 July 2020, Milad Moradpour is employed as a Postdoc at Centre for Industrial Electronics (CIE) at SDU in Sønderborg. He obtained his BSc and MSc degrees from K. N. Toosi University of Technology in Tehran, Iran, in 2007 and 2010, respectively. He received his PhD degree from University of Cagliari in Italy in January 2019 where he was most recently employed as a Postdoc before moving to Denmark.

His main research interests include power electronics, DC-DC converters, wide band gap (WBG) devices (GaN and SiC), gate driver design, PCB design, electric vehicles, and battery energy storage systems.



Upcoming Events

Danish-German PE-Region Platform Demonstrator Seminar (Online)

Tuesday 1 December 2020 at 12.00-14.00

[For further information and registration](#)

Materials and Devices in Power Electronics (Online)

Tuesday 8 December 2020 at 10.30 - 13.30

[For further information and registration](#)

EMC Competence Group Meeting (Online)

Tuesday 15 December 2020 at 12.30 - 14.30

[For further information and registration](#)



Conferences/Seminars/Workshops

Interreg EC-Days 2020 (European Cooperation Days)

21 - 25 September 2020 at Alision in Sønderborg

PE-Region Platform was hosting this year's [EC-Days](#) at Alision in Sønderborg from 21-25 September.



The audience experienced a nice poster exhibition of 20 Interreg projects with focus on the individual success stories of the projects.

SDU Industry Days

Thursday 5 November 2020 at 14.00 - 16.00 (Online)

[Electronics - Mechanics - Automation](#)

On 5 November, SDU opened the doors to companies at the “SDU Industry Day in Sønderborg 2020”. Participants from regional industry and from abroad joined the online event which focused on electronics, mechanics and automation.

Philip Baxter from Banke ApS, Ole Rasmussen from Eegholm A/S and Steffen Thrane Vindt from Innocell ApS presented exciting success stories about 'Industrial Electronics projects'. They shared insights on how technology and product development is successfully realised together with researchers from SDU. These talks were followed by an introduction to the Industrial Mechanics and Electronics Lighthouse in Sønderborg by Thomas Buhl and a keynote from Martin Høgsbjerg from Danfoss Drives about trends in digitalisation and automation. Last but not least the participants joined a virtual tour to the new labs at SDU in Sønderborg and learned about concrete applications for industry.

Please find more information [here](#).



Latest news

EMC Tests

Banke APS' powertrain conversion kit comprises a high-capacity (200kWh) battery pack, a highly efficient electric motor (250kW/2300Nm), and all the required power electronics. The kit can for example convert a combustion engine garbage truck to a full electrical vehicle. The combination of high power electronics with considerable switching frequencies and long cables is the formula for EMI problems. To avoid these problems, Banke and SDU had a close cooperation on EMC during the full project period. With supervision from SDU's EMC experts, the electrical engineers from Banke recently performed an early risk assessment and an evaluation of EMC at module level.

Hereafter, the team continued with proper EMC architecture and finally, the team carried out pre-compliance radiated emission of the full-size truck test in a garage in Sønderborg. By focusing on EMC very early in the project and through the whole project, Banke succeeded to pass the EMC test on the first try.



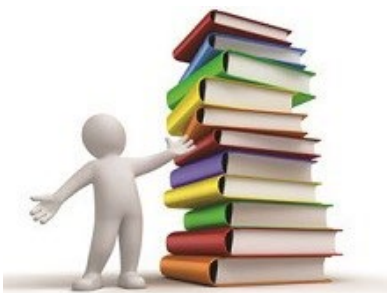
The truck was too large for SDU's EMC chamber why the pre-compliance test was carried out in a garage.

For further information, please visit the homepage of [CIE](#) and have a look at this [article](#) from the Danish media of 6 November.

News from the market

[Bodo](#)
[Elektroniknet](#)
[Elektronik Praxis](#)
[Passive Components](#)

Publications



[Current Source Gate Driver for GaN E-HEMT in Hard-Switched High Power Applications](#)

Moradpour, M., Franke, T., Pirino, P. & Gatto, G., 7 Aug. 2020, *2020 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM)*. [IEEE](#), pp. 408-413

[Design of E-mode GaN HEMTs by the Polarization Super Junction \(PSJ\) technology](#)

Sharbati, S., Ebel, T., & Franke, T., 1 Nov. 2020, I : [Microelectronics Reliability](#). p 4.

Compliments of the season!



This newsletter will shortly be available in Danish and German on our project [homepage](#).

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