

THE 34TH IEEE INTERNATIONAL SYMPOSIUM ON INDUSTRIAL ELECTRONICS IEEE-ISIE 2025

17-20 JUNE 2025, TORONTO, CANADA

Special Session on

**“Cognitive Power Electronics for Smarter, Safer, and More
Stable Grids”**

Organized by

Amjad Anvari-Moghaddam, Department of Energy (AAU Energy), Aalborg
University, Denmark, aam@et.aau.dk

Dmitri Vinnikov, Department of Electrical Power Engineering and Mechatronics,
Tallinn University of Technology, dmitri.vinnikov@taltech.ee

Marek Jasiński, Institute of Control and Industrial Electronics, Warsaw University of
Technology, marek.jasinski@pw.edu.pl

Call for Papers

As electrical grids evolve to accommodate growing demand, renewable energy integration, and emerging energy storage technologies, the role of power electronics (PE) has become indispensable. Cognitive PE represent a new frontier in grid management, leveraging real-time data, artificial intelligence (AI), and advanced control strategies to enhance grid resilience, safety, and adaptability. This special session focuses on how cognitive PE can transform grid infrastructure into a smarter, safer, and more stable system capable of responding autonomously to both internal and external challenges.

Participants are invited to present new methodologies, case studies, and experimental results that demonstrate how cognitive PE can respond to diverse grid conditions, from

weak grid scenarios to high-renewable environments, and address challenges such as power quality, reliability, and cybersecurity.

Suitable topics include, but are not limited to, the following:

- Adaptive and intelligent control for PE
- Reliability and resiliency enhancement techniques for cognitive PE
- Cybersecurity for PE devices and systems
- AI and machine learning for PE
- PE topologies and front-ends for active energy system and microgrids
- Advanced monitoring and protection techniques for PE-dominated power systems
- Power quality issues in PE-based power systems
- PE interfacing issues for energy storage devices and renewable energy sources
- Advanced coordinated control algorithms with minimal communication infrastructure
- Operation and dispatching of PE-based distribution systems with interconnected distributed energy resources
- Off-line, real-time and hardware-in-the-loop simulations of cognitive PE-interfaced power and energy systems.

▪ **Potential Contributing Authors (names and emails):**

Name	Surname	Email
Fang Zheng	Peng	fzpeng@egr.msu.edu
Miaosen	Shen	miaosen.shen@siemens.com shenms@utrc.utc.com
Zhaoming	Qian	zqian2026@outlook.com
Alan	Joseph	josepha2@egr.msu.edu
Leon M.	Tolbert	tolbert@utk.edu
Xiaoming	Yuan	yuanxm@hust.edu.cn
Xupeng	Fang	xpfang69@yahoo.com.cn
Haitham	Abu-Rub	haitham.abu-rub@qatar.tamu.edu
Baoming	Ge	bm-ge@263.net
Poh	Chiang Loh	pcl@et.aau.dk epcloh@ntu.edu.sg
Frede	Blaabjerg	fbl@et.aau.dk
Yushan	Liu	yushan.liu@qatar.tamu.edu
Dmitri	Vinnikov	dmitri.vinnikov@ieee.org
Omar	Ellabban	omarellabban@hotmail.com
Feng	Gao	fgao@sdu.edu.cn
Young- Cheol	Lim	yylim@chonnam.ac.kr
Minh-Khai	Nguyen	khainm@hcmute.edu.vn
Sung-Jun	Park	sjpark1@jnu.ac.kr
Yu	Tang	ty8025@hotmail.com tangyu@nuaa.edu.cn
Ebrahim	Babaei	e-babaei@tabrizu.ac.ir
Jiudong	Ding	jiudong@163.com
Indrek	Roasto	indrek.roasto@ttu.ee
D. Mahinda	Vilathgamuwa	emahinda@ntu.edu.sg
Chandana Jayampathi	Gajanayake	chan0178@ntu.edu.sg
Miao	Zhu	miaozhu@sjtu.edu.cn
Qin	Lei	leiqin@msu.edu

Aníbal	T. de Almeida	adealmeida@isr.uc.pt
Fernando	J. T. E. Ferreira	fernandoferreira@ieee.org
Dongsun	Sun	09117343@bjtu.edu.cn
Oleksandr	Husev	oleksandr.husev@ieee.org
Janis	Zakis	janis.zakis@ieee.org
Xinping	Ding	dxinping@126.com
Chenghui	Zhang	zchui@sdu.edu.cn
Ding	Li	E080010@ntu.edu.sg
Yam P.	Siwakoti	yam.siwakoti@mq.edu.au
Yan	Zhou	yzhou77@ford.com
Hongbo	Li	hli12@caps.fsu.edu
Hui	Li	hli@caps.fsu.edu
Alian	Chen	chenalian@sdu.edu.cn
Xiangyang	Xing	xxy198513@163.com
Jinwei	He	hjinwei@ualberta.ca
Chunshui	Du	duchsh@sdu.edu.cn
Xinmin	Li	lixinmin@tju.edu.cn
Changliang	Xia	motor@tju.edu.cn
Wei	Chen	chen_wei@tju.edu.cn
Tingna	Shi	tnshi@tju.edu.cn
Santosh Kr	Singh	sksingh.eee@iitbhu.ac.in
V. Fernão,	Pires	vitor.pires@estsetubal.ips.pt
Armando,	Cordeiro	acordeiro@deea.isel.ipl.pt
Daniel	Foito	daniel.foito@estsetubal.ips.pt
J. F.	Martins	jf.martins@fct.unl.pt
Liming	Liu	liming@caps.fsu.edu
Xinchun	Lin	linxinchun2002@sina.com
Soumya	Shubhra Nag	soumyasn@iitk.ac.in
Santanu	Mishra	santanum@iitk.ac.in
Avinash	Joshi	ajoshi@iitk.ac.in
Reza	Ahmadi	ahmadi@ku.edu
Keyhan	Sheshyekani	k_sheshyekani@sbu.ac.ir
Robert	S. Balog,	rbalog@ece.tamu.edu
Xiangning	He	hxn@zju.edu.cn
Sideng	Hu	husideng@zju.edu.cn
Sertac	Bayhan	sertac.bayhan@qatar.tamu.edu
Mohamad Reza	Banaei	m.banaei@azaruniv.ac.ir
Saad	Mekhlif	saad@um.edu.my
Martin	Stempfle	stempfle@ilea.uni-stuttgart.de
Ahmed	A. Elserougi	ahmed.elserogi@qatar.tamu.edu
Ahmed	M. Massoud	ahmed.massoud@qu.edu.qa
Ayman	S. Abdel-Khalik	ayman.abdel-khalik@qatar.tamu.edu
Shehab	Ahmed	shehab.ahmed@qatar.tamu.edu
Patrick	Hu	a.hu@auckland.ac.nz
Akshya	Swain	a.swain@auckland.ac.nz
Yugang	Su	su7558@qq.com
Mohsen	Hamzeh	mo_hamzeh@sbu.ac.ir
Heung-	Geun Kim	hgkim@knu.ac.kr
Bo	Zhang	epbzhang@scut.edu.cn
Dongyuan	Qiu	epdyqiu@scut.edu.cn
Hossein	Madadi Kojabadi	hmadadi64@yahoo.ca
Yuan	Li	yli@scu.edu.cn
Dmitry	Panfilov	dmitry89@ngs.ru
Vahid	Behjat	behjat@azaruniv.ac.ir
Steven	B. Leeb	sbleeb@mit.edu
James	L. Kirtley Jr	kirtley@mit.edu
Keyue	Smedley	smedley@uci.edu
Alexander	Abramovitz	
Ben	Zhao	zhaoben_vip@hotmail.com
Sara	Laali	s.laali@tabrizu.ac.ir
Graham	E. Town	graham.town@mq.edu.au
Shuitao	Yang	shuitaoyang@gmail.com
Xinjian	Jiang	jiangxj@mail.tsinghua.edu.cn

Lisa	Liivik	lisa.liivik@ieee.org
Andrii	Chub	andrii.chub@ieee.org
Mohammad	Mardaneh	mardaneh@sutech.ac.ir
Mohsen	Shid Pilehvar	m.shidpilevar@sutech.ac.ir
Amirhossein	Rajaei	a.rajaei@sutech.ac.ir
Liqiang	Yang	yangliqiang88@qq.com
Taehyung	Kim	taehyung@umich.edu
Kai-Ming	Tsang	steve.tsang@polyu.edu.hk
Keshav	Patidar	keshavp@iiti.ac.in
Jing Jun	Soon	jjsoon@ntu.edu.sg
Ebrahim	Afjei	e_afjei@sbu.ac.ir
Su-Han,	Kim	zetec7@nate.com
Zhong	Li	Zhong.Li@fernuni-hagen.de
Wolfgang	A. Halang	Wolfgang.Halang@fernuni-hagen.de
Behzad	Poorali	b.poorali@ec.iut.ac.ir
Alfred	Baghrmian	alfred@guilan.ac.ir
Shaojun	Xie	eeac@nuaa.edu.cn
Volkan	Erginer	volkan.erginer@emo.org.tr
Shukang	Cheng	cskee@hope.hit.edu.cn
Qianfan	Zhang	zhang_qianfan@hit.edu.cn
Dong	Cao	caodong@msu.edu
Lei	Pan	panlei@seu.edu.cn
Wenxun	Xiao	epxwx@yahoo.com.cn
Farshad	Khosravi	farshadgoli@fkegraduate.utm.my
Andrzej	M. Trzynadlowski	chin@unr.edu
Weizhang	Song	songwz464237@126.com
Yanru,	Zhong	zhongyr@xaut.edu.cn
Hao,	Zhang	haozhang@xjtu.edu.cn
Xiangdong	Sun	sxd1030@163.com
Wei	Wang	weiwei_gwtw@sina.com
Marian	K. Kazimierczuk	marian.kazimierczuk@wright.edu
Liangzong	He	hlz190213@163.com
Shanxu	Duan	dshanxu@263.net
Jianfeng	Liu	ljf@csu.edu.cn
Shuai	Jiang	jiangshu@msu.edu
HePing	Liu	engineer@cqu.edu.cn
Ping	Liu	lp1481@gmail.com
Atif	Iqbal	atif.iqbal@qu.edu.qa
Sk.Moin	Ahmed	moin.sk@qatar.tamu.edu
Francis	Boafo Effah	eeexfe2@nottingham.ac.uk
Patrick	Wheeler	Pat.Wheeler@nottingham.ac.uk
Jon	Clare	jon.clare@nottingham.ac.uk
Alan	Watson	alan.watson@nottingham.ac.uk
Woongchul	Choi	danchoi@kookmin.ac.kr
Jin	Wang	jwang78@ford.com wang@ece.osu.edu
Feng	Guo	guo.135@osu.edu
Lixing	Fu	fu.141@osu.edu
Chien-Hui	Lin	lin.1158@osu.edu
Cong	Li	li.1012@osu.edu
Fatih	Evran	fevran@gazi.edu.tr
Bharani Kumar	Ramasamy	bharanikumar.rbk@gmail.com
Adda	Ravindranath	raviadda@iitk.ac.in
Olive	Ray	olive@iitk.ac.in
Chaohua	Zhang	zhangchaohua007@163.com
Xiong	Liu	liux0039@ntu.edu.sg
Peng	Wang	epwang@ntu.edu.sg
Xiaoqing	Han	hanxiaoqing@tyut.edu.cn
Wei	Qian	qianwei@msu.edu
Honnyong	Cha	chahonny@knu.ac.kr huncha92@gmail.com
Héctor	G. Chiacchiarini	hgch@uns.edu.ar
Alejandro	R. Oliva	aoliva@uns.edu.ar

Joeri,	Van Mierlo	jvmierlo@vub.ac.be
Philippe	Lataire	plataire@vub.ac.be
Yong-Jae	Kim	kimyj21@chosun.ac.kr
Ali	Yazdian	Yazdian@modares.ac.ir
Kyo-Beum	Lee	kyl@ajou.ac.kr
Keith A.	Corzine	Keith@Corzine.net
Robert	W. Ashton	robert_w_ashton@yahoo.com
Luca	Solero	solero@uniroma3.it
Ryszard	Strzelecki	rstrzele@am.gdynia.pl
Marek	Adamowicz	madamowi@ely.pg.gda.pl
Biao	Zhao	zhaobiao112904829@126.com
Qingguang	Yu	yugingguang@163.com
Xiyu	Chen	chenxy@dlut.edu.cn
Malabika	Basu	mbasu@dit.ie
Fabricio,	Bradaschia	fabricio.bradaschia@ufpe.br
Marcelo	C. Cavalcanti	marcelo.cavalcanti@ufpe.br
Francisco	A. S. Neves	fneves@ufpe.br
Euzeli	C. dos Santos, Jr	euzeli@dee.ufcg.edu.br
Sumedha,	Rajakaruna	s.rajakaruna@curtin.edu.au
Laksumana	Jayawickrama	ljayawickrama@pb.com.au
Seyed Mohammad	Dehghan	dehghansm@modares.ac.ir
Mustafa	Mohamadian	mohamadian@modares.ac.ir
Farhad	Ashrafzadeh	farhad.ashrafzadeh@ieee.org
Young-Gook	Jung	jyg@mail.daebul.ac.kr
Young-Min	Kim	kimgun@celrun.com
Kun	Yu	E080067@ntu.edu.sg
Fang Lin	Luo	eflluo@ntu.edu.sg
Dong-Wook	Yoo	dwyo0@keri.re.kr
Malik	E. Elbuluk	melbuluk@uakron.edu
Lip Kian	Siow	lksiow@ntu.edu.sg
Hoay Beng	Gooi	ehbgooi@ntu.edu.sg
Ping	LamSo	eplso@ntu.edu.sg
Zegang	Xu	xuzg@czu.cn
Keping	You	youkeping@yahoo.com.au
M. F.	Rahman	f.rahman@unsw.edu.au
Julio	Cesar Rosas-Caro	rosascarojc@hotmail.com
Remus	Teodorescu	ret@iet.aau.dk
Xing	Zhang	honglf@ustc.edu.cn
Po	Xu	xupo_dldz@163.com
Weixiang	X. Shen	shen.wei.xiang@eng.monash.edu.my
Quang-Vinh	Tran	tqvinh_vn@yahoo.com
Tae-Won	Chun	twchun@mail.ulsan.ac.kr
Jung-Ryol,	Ahn	passion-17@hanmail.net
Hong-Hee	Lee	hhlee@mail.ulsan.ac.kr
Sok Wei	Lim	s8100739z@ntu.edu.sg
Jin-Woo	Jung	jung.103@osu.edu
Jiangang	Hu	hu.158@osu.edu
Longya	Xu	xu.12@osu.edu
Marek	Jasinski	marek.jasinski@pw.edu.pl
Mariusz	Malinowski	mariusz.malinowski@pw.edu.pl
Arkadiusz	Kaszewski	arkadiusz.kaszewski@pw.edu.pl
Adam	Milczarek	Adam.milczarek@pw.edu.pl
Grzegorz	Wrona	Grzegorz.wrona@pw.edu.pl
Cezary	Sobol	Cezary.sobol@pw.edu.pl

■ **Potential Reviewers (names and emails):**

Name	Email
Andres Barrado	barrado@ing.uc3m.es
Andrzej Sikorski	sikorski@pb.edu.pl
Antonio Lazaro	alazaro@ing.uc3m.es
Antonio Moreno-Munoz	a.moreno@ieee.org
Armando Pires	armando.pires@estsetubal.ips.pt
Artur Moradewicz	a.moradewicz@iel.waw.pl
Boguslaw Grzesik	Boguslaw.Grzesik@polsl.pl
Detlef Schulz	detlef.schulz@hsu-hh.de
Duarte de Mesquita e Sousa	duarte.sousa@ist.utl.pt
Eva González Romera	evagzlez@unex.es
Francisco Jurado	fjurado@ujaen.es
Frede Blaabjerg	fbl@et.aau.dk
Ilya Galkin	gia@avene.eef.rtu.lv
Indrek Roasto	indrek.roasto@ttu.ee
Irena Wasiak	irawas@p.lodz.pl
Jacek Dawidziuk	dawid@pb.bialystok.pl
Jesús Doval Gandoy	jdoval@uvigo.es
João Luiz Afonso	jla@dei.uminho.pt
João Pina	jmmp@fct.unl.pt
Johann Walter Kolar	kolar@lem.ee.ethz.ch
Juan José González de la Rosa	juanjose.delarosa@uca.es
Krzysztof Tomczuk	k.tomczuk@iel.waw.pl
Lech Grzesiak	L.Grzesiak@isep.pw.edu.pl
Leopoldo G. Franquelo	lgfranquelo@ieee.org
Luis Martínez Salameiro	luis.martinez@urv.cat
Marcin Jarnut	m.jarnut@iee.uz.zgora.pl
Marek Adamowicz	marek.adamowi@gmail.com
Marek Jasinski	mja@isep.pw.edu.pl
María Isabel Milanés Montero	milanes@unex.es
Marian Kazmierkowski	mpk@isep.pw.edu.pl
Mariusz Malinowski	malin@isep.pw.edu.pl
Patrick Luk	p.c.k.luk@cranfield.ac.uk
Paulo Jose da Costa Branco	pbranco@ist.utl.pt
Piotr Biczal	biczal@ee.pw.edu.pl
Rui Araújo	raraujo@fe.up.pt
Ryszard Strzelecki	rstrzele@am.gdynia.pl
Silvio Mariano	sm@ubi.pt
Stanislaw Piróg	pirog@uci.agh.edu.pl
Tanel Jalakas	tjalakas@gmail.com
Tapani Jokinen	tapani.jokinen@aalto.fi
Toomas Rang	trang@elin.ttu.ee
Valery Vodovozov	valery.vodovozov@ttu.ee
Vanja Ambrozic	vanjaa@fe.uni-lj.si
Vitor Manuel De Carvalho Fernao Pires	vitor.pires@estsetubal.ips.pt
Walter Suemitsu	suemitsu@coe.ufrrj.br

Zbigniew Fedyczak	z.fedyczak@iee.uz.zgora.pl
Zbigniew Hanzelka	hanzel@agh.edu.pl
Marek Adamowicz	madamowi@ely.pg.gda.pl
Antonio Andrade	antoniom.spencer@gmail.com
Rui Esteves Araujo	diogo.varajao@fe.up.pt
Diego Arcos-Avilés	dgarcos@espe.edu.ec
Josep Balcells_Sendra	josep.balcells@upc.edu
Andrei Blinov	andrei.blinov@ieee.org
Hicham Chaoui	Hicham.Chaoui@uqtr.ca
Andrii Chub	andrii.chub@ttu.ee
Hisham Deeb	hisham.eldeeb@qu.edu.qa
Ali Eltamaly	eltamaly@ksu.edu.sa
Gerardo Escobar	gescobar@ieee.org
Bruno Exposto	bexposto@dei.uminho.pt
Vitor Fernao Pires	vitor.pires@estsetubal.ips.pt
Ilya Galkin	gia@eef.rtu.lv
Javier Gallardo-Lozano	jagallardo@peandes.net
Juan José González de la Rosa	juanjose.delarosa@uca.es
Nikolay Grebchenko	decan@elf.dgtu.donetsk.ua
Mohsen Hamzeh	hamzeh64@gmail.com
Ahmad Harb	aharb48@gmail.com
Oleksandr Husev	oleksandr.husev@ieee.org
Karel Jezernik	karel.jezernik@uni-mb.si
Nikolay V. Korovkin	nikolay.korovkin@gmail.com
Radoslaw Kot	radoslaw.kot@ee.pw.edu.pl
Quang Linh Lam	quang-linh.lam@g2elab.grenoble-inp.fr
Manuel Lamich	manuel.lamich@upc.edu
Ievgen Maliarenko	malugin86@ya.ru
Joao Martins	jf.martins@fct.unl.pt
Víctor Miñambres-Marcos	vminmar@unex.es
Pawel Mlodzikowski	pawel.mlodzikowski@ee.pw.edu.pl
Vítor Monteiro	vmonteiro@dei.uminho.pt
Antonio Moreno-Munoz	amoreno@uco.es
Andrey Nikiforov	apniktel@yandex.ua
Gabriel Ortiz	ortiz@lem.ee.ethz.ch
José Carlos Palomares Salas	josecarlos.palomares@uca.es
Szymon Piasecki	szymon.piasecki@ee.pw.edu.pl
Gabriel Pinto	gabriel.pinto@agoritm.uminho.pt
Indrek Roasto	indrek.roasto@ttu.ee
Carlos Roncero-Clemente	croncero@peandes.net
Carlos Rosa	p110294@campus.fct.unl.pt
Argo Rosin	argo.rosin@ttu.ee
Andoni Saez-de-Ibarra	asaiezdeibarra@ikerlan.es
Isabel Santiago Chiquero	el1sachi@uco.es
Sonia Semedo	ssemedo@eneida.pt
Federico Serra	fserra@ieee.org
Robert Smolenski	R.Smolenski@iee.uz.zgora.pl

Duarte Sousa	duarte.sousa@ist.utl.pt
Andrew Stepanov	andrejs.stepanovs@rtu.lv
Alexander Suzdalenko	Aleksandrs.Suzdalenko@RTU.lv
Olegs Tetervenoks	olegs.tetervenoks@rtu.lv
Bartlomiej Ufnalski	bartlomiej.ufnalski@ee.pw.edu.pl
Mircea F. Vancu	vancu@lem.ee.ethz.ch
Ana Vidal	anavidal@uvigo.es
Dumidu Wijayasekara	wija2589@vandals.uidaho.edu
Daniel Wojciechowski	dwojc@am.gdynia.pl
Muhammed Worku	muhammedw@kfupm.edu.sa
Janis Zakis	janis_zakis@yahoo.com
Qing-Chang Zhong	zhongqc@ieee.org
Atif Iqbal	atif2004@gmail.com
Anibal T. de Almeida	adealmeida@isr.uc.pt
Ayman Ayad	ayman.francees@tum.de
Baoming Ge	gebm@exchange.tamu.edu
Bo Zhang	epbzhang@scut.edu.cn
Fan Yi	fan.yi@utdallas.edu
Fang Zheng Peng	fzpeng@egr.msu.edu
Fernando J. T. E. Ferreira	ernandoferreira@ieee.org
Frede Blaabjerg	fbl@et.aau.dk
Haitham Abu-Rub	haitham.abu-rub@qatar.tamu.edu
Jacek Rabkowski	jacek.rabkowski@isep.pw.edu.pl
Mariusz Zdanowski	mariusz.zdanowski@ee.pw.edu.pl
Meraj Mohammad	meraj@qu.edu.qa
Minh-Khai Nguyen	khainm@hcmute.edu.vn
Mohamed Trabelsi	mohamed.trabelsi@qatar.tamu.edu
Morcos Metry	morcos.metry@email.tamu.edu
Mostafa Mosa	mmosa2008@gmail.com
Syed Rahman	syed.rahman@qu.edu.qa
Yam Siwakoti	siwakoti.engg@gmail.com
Arkadiusz Kaszewski	arkadiusz.kaszewski@pw.edu.pl
Adam Milczarek	adam.milczarek@pw.edu.pl
Grzegorz Wrona	Grzegorz.wrona@pw.edu.pl
Cezary Sobol	Cezary.sobol@pw.edu.pl

▪ **IES Technical Committee Sponsoring the Special Session (if any):**

- IEEE IES Resilience and Security for Industrial Applications (ReSia)
- IEEE IES Power Electronics Technical Committee: Inverters/Rectifiers subcommittee, Impedance Source Converters subcommittee, Electric Machines and Drives subcommittee, DC-DC Converters subcommittee.