

# **Center for Power Electronics Systems**

## Empowerment via the CPES connection

### PRINCIPAL PLUS MEMBERS

3M Company ABB, Inc. **Analog Devices** Aurora Flight Sciences CRRC Zhuzhou Institute Co., Ltd. Delta Electronics East China Res. Inst. of Microelectronics EnerSys Ford Motor Company FSP-Powerland Technology, Inc.

Hyundai Mobis Infineon + International Rectifier Innoscience (Zhuhai) Technology Inventronics (Hangzhou), INC. Jiangsu Wanbang Dehe New Energy

GE Global Research / GE Aviation

Technology Co., Ltd. Komatsu Ltd.

**GE Grid Solutions** 

Lite-On Technology Corporation Lockheed Martin Corporation Moog, Inc.

Murata Manufacturing Co., Ltd. Navitas Semiconductor Nissan Motor Co., Ltd. NXP Semiconductors ON Semiconductor

Panasonic Corporation Rockwell Automation

Siemens Corporate Technology

Silergy Corporation

TMEIC

**Texas Instruments** VisIC Technologies

### JOIN THE CPES FAMILY -

- The best mechanism to stay abreast of technological developments in power electronics
- The ideal forum for networking with leading-edge companies and top-notch researchers

### GAIN THE COMPETITIVE EDGE --

Leveraged funding -- reap the benefit of leveraged research funding of \$4.5 million per year Industry influence -- guide the Center by serving on the Industry Advisory Board (IAB); help shape the Center's research program by participating in IAB working groups

**Intellectual property** – capture first-hand knowledge of CPES-generated technologies. Enroll as Principal Plus or Principal Member and gain IPPF (Intellectual Property Protection Fund)\* benefits

Technology transfer -- gain the competitive edge via easy access to CPES publications and research updates, as well as the multi-disciplinary team of researchers

Continuing education -- enroll in the CPES professional short courses at a significant discount to broaden knowledge base and stay updated on new technologies

Access to state-of-the-art facilities, faculty expertise, top-notch students – utilize the invaluable resources and opportunities available via the CPES connection

### ...... CPES INDUSTRY PARTNERSHIP PROGRAM

- Tiered membership structure to benefit industries with varying needs and interests -Principal Member Plus (\$50,000 per year) – Automatic IP benefits\*, with membership funds earmarked for mini-consortium for focused research... plus all benefits below

Principal Member (\$30,000 per year) – Automatic IP benefits\*, opportunity to guide and influence CPES via Industry Advisory Board (IAB) and IAB working groups ... plus all benefits below

Associate Member (\$15,000 per year) – password access to publications, presentations and student directory; complimentary registration for annual conference; significant discount for short courses; invitation to industry webinar presentations; option to participate in industry residence program, access to faculty, students, and state-of-the-art facilities

**Affiliate Member** (in-kind contributions, membership by invitation only) – password access to CPES conference proceedings

### \*Intellectual Property Protection Fund (IPPF)

IPPF is a unique IP access mechanism that provides extraordinary IP advantage to Principal-level members. IPPF is available automatically, at no additional cost, to Principal Plus and Principal members IPPF members meet quarterly via telecon with inventors to discuss invention disclosures and jointly decide which technologies to protect, with patenting costs covered by IPPF. Once a technology is protected, IPPF members are granted a royalty-free, non-exclusive, non-transferable license to use the technology. IPPF is applicable only to technologies developed under the industry consortium by CPES-VT researchers. Visit us at: https://cpes.vt.edu/

LG Electronics Mercedes-Benz R&D N. A., Inc.

PRINCIPAL MEMBERS

NR Electric Co., Ltd.

Raytheon Company

Schneider Electric IT Corporation

Toshiba Corporation

VERTIV

EATON

Flextronics

United Technologies Research Center ZTE Corporation

#### ASSOCIATE MEMBERS

AcBel Polytech, Inc.

Cummins, Inc.

Fuii Electric Co., Ltd.

General Motors

Groupe SAFRAN

Halliburton Energy Services, Inc.

Johnson Controls, Inc.

Kohler Company

Maxim Integrated Products

Microsoft Corporation

Northrop Grumman Mission Systems

Richtek Technology Corporation

Robert Bosch GmbH

Shindengen Electric Mfg. Co., Ltd.

Sumitomo Electric Industries, Ltd.

Suzhou Inovance Technology Co., LTD.

TDK-Lambda Corporation

Tesla Motors

Toyota Motor Corporation

United Silicon Carbide, Inc.

#### AFFILIATE MEMBERS

ANSYS, Inc.

Chicony Power Technology Co., Ltd. CISSOID

EGSTON Power Electronics GmbH

Efficient Power Conversion

Electronic Concepts, Inc.

Hitachi Metals

Mentor Graphics Corporation

**OPAL-RT Technologies** 

Plexim GmbH Powersim, Inc.

Silvaco

Simplis Technologies, Inc.

Synopsys, Inc.

Taivo Yuden Co., Ltd.

Tektronix, Inc.

TOKIN Corporation

Transphorm, Inc.



### **CPES INDUSTRY PARTNERSHIP PROGRAM**

-- A tiered structure to benefit industries with varying needs and interests --

## **Industry Partners' Commitments and Benefits**

	PRINCIPAL MEMBER PLUS	PRINCIPAL MEMBER	ASSOCIATE MEMBER
ANNUAL COMMITMENT	\$50,000	\$30,000	\$15,000
DIRECTED RESEARCH	Option to earmark \$40,000 of membership funds to participate in a mini-consortium for focused research or support a graduate student fellowship to explore research area relevant to the CPES strategic plan		
INTELLECTUAL PROPERTY (IP) ADVANTAGE	<ul> <li>Automatic IPPF* benefits at no additional cost to gain royalty-free, non-exclusive, non-transferable license</li> <li>Early access to CPES intellectual properties</li> <li>Two-year exclusivity for licensing opportunities</li> <li>Confidential info exchange upon execution of membership and IPPF agreements</li> </ul>		
INDUSTRY	Guaranteed seat on Industry Advisory Board	(IAB) to influence and guide CPES	Representation by election
INFLUENCE	Opportunity to participate in IAB Working Gr	oups to help shape CPES research direction	Representation by invitation
TECHNOLOGY TRANSFER	<ul> <li>Password access to CPES database of papers, theses, dissertations, presentations, as well as student directory</li> <li>Complimentary registration to attend CPES annual conference</li> <li>Significant discount for CPES professional short courses</li> <li>Invitation to interact with CPES-VT researchers in monthly industry webinar presentations</li> <li>Opportunity for research collaboration, access to CPES research results, faculty, students, and state-of-the-art facilities</li> <li>Option to participate in Industrial Residence Program and work on site in CPES labs</li> </ul>		

<sup>\*</sup> IPPF (Intellectual Property Protection Fund) is an IP protection and access mechanism that provides extraordinary IP advantage to Principal-level members. IPPF members meet quarterly to discuss invention disclosures and jointly decide which technologies to protect, with patenting costs covered by IPPF. Once a technology is protected, IPPF members are granted a royalty-free, non-exclusive, non-transferable license to use the technology. IPPF is applicable only to technologies developed by CPES-VT researchers under the industry consortium.