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**College of Science and Engineering /
Department of Electrical and Electronic Engineering**

(Male)

HIROAKI KAKIGANO**Associate Professor**

■Concurrent affiliation

- Graduate School of Science and Engineering
- Research Organization of Open Innovation & Collaboration /
Research Center for Sustainability Science

■Graduate school/University/other

- 03/1999 Nagoya University School of Engineering Department of Nuclear Engineering Graduated
- 03/2001 Nagoya University Graduate School of Engineering Department of Energy Engineering and Science Doctoral course first term (Master's) Completed
- 03/2006 Osaka University Graduate School of Engineering Department of Electrical Engineering Doctoral course second term (Doctoral) Withdrawal

■Academic degrees

- Master of Engineering (03/2001 Nagoya University) ■ Ph.D in Engineering (03/2009 Osaka University)

■Career history

04/01/2001-03/31/2004 Nissin Inc.

04/01/2006-03/31/2007 Division of Electrical, Electronic and Information Engineering, Graduate School of Engineering, Osaka University, Research Associate

04/01/2007-12/31/2012 Division of Electrical, Electronic and Information Engineering, Graduate School of Engineering, Osaka University, Assistant Professor

09/01/2011-03/08/2012 KU Leuven, Visiting Professor

01/01/2013-03/31/2013 Division of Electrical, Electronic and Information Engineering, Graduate School of Engineering, Osaka University, Associate Professor

■Academic society memberships

- IEEE
- The Institute of Electrical Engineers of Japan
- The Japan Institute of Power Electronics

■Research summary

Power electronics for power system applications

Electrical energy is essential for our society, and 'Power Electronics' plays an important role to use the electrical energy effectively because it is deeply related to generation, storage, supply and usage. Our laboratory researches the power electronics applications in power supply systems for high stability, high quality and high efficiency. We can get fully understanding of power electronics and power system engineering through these research activities.

■Research keywords

Power Electronics, Power System

■Research activities (Even top three results are displayed. In View details, all results for public presentation are displayed.)

■ Books

(In Japanese) 例題で学ぶはじめての電源回路 Hiroaki Kakigano Gijutsu-Hyohron Co., Ltd. 12/2017 978-4-7741-9401-1

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■ Papers

Experimental Verification on High Voltage Application of Power Line Communication Taichi Tsuji, Takahiro Hashimoto, and Hiroaki Kakigano Journal of the Japan Institute of Power Electronics 43, 138-144 03/2018 1884-3239

DC Capacitor Voltage Control of MMC for HVDC using Negative Sequence Current Kento Kuwabara, and Hiroaki Kakigano Journal of the Japan Institute of Power Electronics 43, 89-96 03/2018 1884-3239

Combined Pulse-Width Modulation of Dual Active Bridge DC-DC Converter to Increase the Efficiency of Bidirectional Power Transfer Muhammad Hazarul Azmeer bin Ab Malek, Hiroaki Kakigano, and Kiyotsugu Takaba IEEJ Journal of Industry Applications 7/ 2, 166-174 03/2018 2187-1108 [10.1541/ieejia.7.166](#)

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■ Research presentations

A Control Method of DC Capacitor Voltage in MMC for HVDC System Using Negative Sequence Current International Power Electronics Conference (IPEC) 2018 05/23/2018

Stabilization Method for Residential DC System Based on Passivity Criterion International Power Electronics Conference (IPEC) 2018 05/21/2018

Experimental Verification on Acoustic Noise Reduction Effect of SRM with Falling Waveform Driving Current 2018 Annual Meeting Record I.E.E. Japan 03/16/2018

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■ Grants-in-Aid for Scientific Research (KAKENHI)

[Link to Grants-in-Aid for Scientific Research -KAKENHI-](#)

■ Achievements of joint / funded research

Super Cluster Program, Kyoto, "Motor Control Application" 04/2017-03/2018 Joint research Main representative

Satelite Cluster in Super Cluster Program, Kyoto, "Converter for PV System" 04/2017-03/2018 Joint research Main representative

Satelite Cluster in Super Cluster Program, Kyoto, "Converter for PV System" 04/2016-03/2017 Joint research Main representative

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■ Academic awards

IEEE Industrial Electronics Society Japan Joint Chapter IEEE Industrial Electronics Society Japan Chapter Young Engineer Award 04/2016

IEEE 37th IEEE International Telecommunications Energy Conference Outstanding Paper Award 3rd Prize 10/2015

The Institute of Electrical Engineers of Japan (In Japanese) 電気学会 電力・エネルギー部門大会優秀論文発表賞 10/2009

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■ Intellectual property rights

(In Japanese) 直流給電システムおよび蓄電装置 2010-68652

(In Japanese) 電力供給システム 2009-124792

(In Japanese) ブラズマディスプレイパネルの点灯安定化処理装置 2005-141945

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■Teaching experience (Even top three results are displayed. In View details, all results for public presentation are displayed.)

■ Courses taught

2017 Thesis Seminar

2017 Applied Exercise for Electrical & Electronic Eng. Seminar

2017 Individual Research1 Seminar

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■ Teaching achievements

The first grade students from Ikueinishi high school visited our laboratory. 06/2017-06/2017

Students from IITH in India visited our laboratory as one part of a international project. 12/2016-12/2016

I gave a lecture about electrical energy and power electronics to students from Masuda High School.
10/2015-10/2015

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■URL

■ [Power System Laboratory](#)

■Research keywords(on a multiple-choice system)

■ Power engineering/Power conversion/Electric machinery