




5月29日(水) 16:00~18:00
名城 サイエンス テクノロジー セミナー
IEEE 会長と前理事が講演

本学大学院理工学研究科の福田敏男教授が、米国に本部を持つ世界最大の電気・電子関係の専門家組織、IEEE^{※注}（アイ・トリプル・イー、米国電気電子工学協会）の2019 President-Elect、2020 President（2019年次期会長、2020年会長）にアジアから初めて当選したことは2018年11月16日にお知らせしましたが、福田研究室が主体になり、下記の通り招待講演を開きます。本学国際化計画2026の学部・研究科の国際専門研修プログラムとして実施します。

講師は、IEEE 現会長のホセ・ムーラ・カーネギーメロン大学（米国）教授と IEEE2016-2017 地区理事のマチェイ・オゴジャウエック・ヤギェウオ大学（ポーランド）教授です。

福田教授はホスト役ですが、IEEE の現会長と次期会長が国内で一堂にそろう機会は珍しく、工学関係者にとっても、世界最先端の研究概要を聴講できる好機です。事前の開催告知と当日の取材をお願いします。通訳はありません。

※注 “The Institute of Electrical and Electronics Engineers, Inc.” の頭文字

日時・場所	2019年5月29日(水) 16:00~18:00 天白キャンパス研究実験棟Ⅱ K261
	16:00~17:00 演題 3D integrated nanosystems - advances and challenges (3次元ナノシステム - 進歩と挑戦) 講師 Maciej Ogorzałek (前 IEEE Div. I 理事等、Jagiellonian University, Krakow, Poland) ナノシステムの専門家
	17:00~18:00 演題 Traffic Counts from Webcams (ウェブカメラを用いた交通流の計測) 講師 José M. F. Moura (IEEE 会長, Carnegie Mellon University, Pittsburg, USA) 信号処理の専門家
対象など	教職員、学生、一般社会人ほか。事前申し込み不要。受講無料。 問い合わせは、福田研究室 052-838-2603 へ。

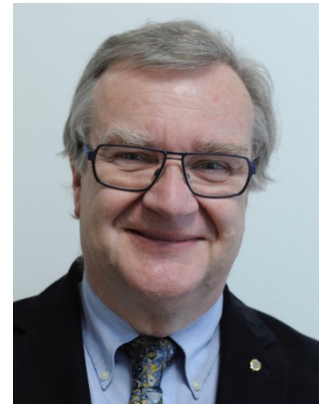
Meijo Science Technology Seminar

日時: 2019年5月29日(水) 16:00-17:00

場所: 名城大学天白キャンパス研究実験棟Ⅱ K261

タイトル: 3D integrated nanosystems - advances and challenges

講師: MACIEJ J. OGORZALEK, Jagiellonian University



Krakow, Poland (ヤギェウオ大学教授、前 IEEE Div. I 理事等)

Abstract:

Integrated circuits are omnipresent. We not only use mobile phones, personal computers but we are surrounded by systems whose operation

highly depends on advances sensors, processing systems, controllers etc. such as home appliances, cars, smart cards, smart energy systems, bio-medical equipment, smart offices, transportation systems and many others.

There are more and more new applications appearing in the picture with enormous data flows to deal with and process for our advantage.

For these new envisaged applications we will need electronic systems with much improved, maybe 1000 times, performance in terms of power consumption, speed of operation and reliability.

As the sizing of transistors in current technologies comes to the atomic distance limitations further development becomes possible by either introduction of new disruptive technologies or changing in geometric arrangements and architectures of the elements and building blocks.

Some limitations in microcircuit constructions can be avoided by putting whole building blocks and sub-circuits in stacks. Such an approach allows for more efficient space usage at the same time allowing circuit footprint reduction. New routing solutions offer very significant wire-length reductions thus reducing power dissipations and signal delays.

3D integration looks as a fantastic new area of development, however, there are many new challenges and problems to be solved for the next generation of nano systems. 3D integration offers also unprecedented opportunities by allowing blocks fabricated in heterogeneous technologies to be integrated in one chip. This allows for stacking and integration of microprocessors, memories, RF circuitry, sensors, batteries and hyper-capacitors, energy harvesting blocks, biological and chemical sensors and many new types of building blocks in one chip.

However innovation is needed for new developments.

In this lecture we will present the state-of-the-art and an outlook with commentaries what new solutions might be needed.

Biography:

MACIEJ J. OGORZALEK is Professor and Head of the Department of Information Technologies, Jagiellonian University Krakow, Poland.

He held visiting positions in Denmark, Switzerland, Germany, Spain, US, Japan, Hong Kong. In 2005 he was Hertie Foundation guest professor at The Goethe University Frankfurt/Germany. 2006-2009 he held the Chair of Bio-signals and Systems, Hong Kong Polytechnic University under the Distinguished Scholars Scheme.

In the fall 2018 he was guest professor at Waseda University/Tokio and in spring 2019 distinguished guest professor at Kyoto University, Japan.

Author of over 400 technical papers published in journals and conference proceedings, and the book *Chaos and Complexity in Nonlinear Electronic Circuits* (World Scientific).

He has served as Associate Editor for several international scientific journals. *Plenary or Keynote speaker at over 60 major international conferences and workshops.*

He served IEEE in various capacities including Circuits and Systems Society President 2008 and Member of the IEEE Board of Directors 2016-2017 as Division 1 Director.

In 2012 elected Member of Academia Europaea and in 2016 Corresponding Member of the Polish Academy of Sciences.

連絡先 (For more information) :

名城大学工学部メカトロニクス工学科福田研究室

Fukuda Laboratory, Department of Mechatronics Engineering, Meijo University

TEL : 052-838-2603

Meijo Science Technology Seminar

日時： 2019 年 5 月 29 日（水） 17 : 00–18 : 00

場所： 名城大学天白キャンパス研究実験棟ⅡK261

タイトル： Traffic Counts from Webcams

講師： José M. F. Moura, IEEE President and CEO,
Carnegie Mellon University



Abstract:

Over half the world population lives today in cities and urban population is expected to grow to 66% of the 9.8 billion humans in the planet by 2050. Many cities have adopted an open data policy, making available many diverse datasets, a great opportunity to develop new data analytics to help city managers and planners to better manage their resources and better design their cities. This talk focus on transit mobility that is, not social or economic mobility, in particular, we present a deep data analytics methodology to extract traffic density from low resolution city webcams and discuss some of the issues when attempting to scale-up our proposed solution to provide a broad high-spatial and high-temporal panorama of traffic mobility covering a whole metro area.

Biography:

José M. F. Moura, www.ece.cmu.edu/~moura, is IEEE President and CEO. He is the Philip L. and Marsha Dowd University Professor at CMU, with interests in signal processing and data science. He invented (with Alek Kavcic) a detector found in at least 60% of the disk drives of all computers sold worldwide in the last 13 years (over 3 billion) - the subject of a 2016 US \$750 Million settlement between CMU and Marvell, the largest settlement ever in the information technologies intellectual property area and 3rd largest overall. Moura received the CMU College of Engineering Distinguished Professor Award, the IEEE Signal Processing Society *Technical Achievement Award* and its *Society Award*. He is Fellow of the IEEE and of the American Association for the Advancement of Science, AAAS, corresponding member of the Academy of Sciences of Portugal, Fellow of the US National Academy of Innovators, and member of the US National Academy of Engineering.

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