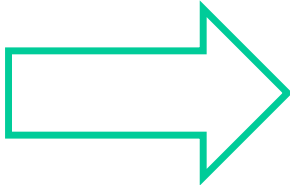# SIG on "Energy-Harvesting Cognitive Radio Networks"

Presentation at IEEE ICC 2019

Outline

- Introduction

- Chair, Vice-Chairs, and Senior Advisors

- Founding Members

- Activities (Year 2018)

- Current Activities (Years 2018-2019)

- Next Activities

Introduction

- This SIG was created at the beginning of this year (2018).

- Cognitive Radio + Energy Harvesting:

  - Cognitive Radio:

    - Spectrum scarcity

  - Energy Harvesting:

    - Energy efficiency

Spectrum and energy-efficient communications systems

- This SIG aims to sponsor and promote technical publications, workshops, tutorials, journal special issues, student activities, and other related activities in the areas relevant to energy-harvesting cognitive radio networks (EHCRNs).

Team

Chair:

- Daniel Benevides da Costa, Federal University of Ceará (UFC), Brazil.

Vice-Chairs:

- Octavia Dobre, Memorial University, Canada

- Trung Q. Duong, Queen's University Belfast, UK

- Minghua Xia, Sun Yat-sen University, China

- Phee Lep Yeoh, University of Sydney, Australia

Senior Advisors:

- Mohamed Slim-Alouini, KAUST, Saudi Arabia

- George K. Karagiannidis, Aristotle University of Thessaloniki, Greece

- Arumugam Nallanathan, Queen Mary University of London, UK

Founding Members

Founding Members:

- Prabhat K. Upadhyay, India Institute of Technology (IIT) Indore, India.

- Georges Kaddoum, École de Technologie Supérieure (ETS), Canada

- Nan Yang, Australia National University, Australia

- Jules Moualeu, University of the Witwatersrand, South Africa

- Marco Di Renzo, CNRS, France

- Alexandros-Apostolos A. Boulogeorgos, Aristotle University of Thessaloniki, Greece

- Haiyang Ding, Xidian University, China

- Ugo Silva Dias, University of Brasília, Brazil

- Zhiguo Ding, Lancaster University, UK

- Petros Bithas, University of Pirineus, Greece

- Athanasios G. Kanatas, University of Pirineus, Greece

- Mustapha Benjillali, INPT, Morocco

Activities (Year 2018)

IEEE PIMRC 2018: 1st Workshop on Energy Harvesting Communi-cation Networks

- Workshop Organizers:

    Daniel Benevides da Costa (Lead)

    Himal A. Suraweera

    Derrick Wing Kwan Ng

    Minghua Xia

    Prabhat K. Upadhyay

    Haiyang Ding

    Bruno Clerckx

- ¾-day workshop
    - 1 Technical Session, 2 Keynote Speakers, 1 Panel Session

Activities (Year 2018)

W-K   **1st Workshop on Energy Harvesting Communication Networks**

Time	EDAS Number	Title	Authors with Affiliations
9.00			
9:00-9:22	1570460059	Time Reversal Scheme Using Multiple Transmit Antennas for SWIPT in Indoor Channel	Hongsun An and Hyuncheol Park (KAIST, Korea)
9.23-9.45	1570459781	Exploitation of Time Modulated Arrays for Multisine Power Transmission	Francesco Mani (Università degli studi di Bologna, Italy); Diego Masotti (University of Bologna, Italy); Alessandra Costanzo (DEI, University of Bologna, Italy)
9.46-10.08	1570463000	Hybrid Satellite-Terrestrial Spectrum Sharing Systems with RF Energy Harvesting	Vibhum Singh and Prabhat Kumar Upadhyay (Indian Institute of Technology Indore, India); Daniel Benevides da Costa (Federal University of Ceara (UFC) & Area: Telecommunications, Brazil); Ugo Dias (University of Brasilia, Brazil)
9.09-10.30	1570463308	Positive Impact of Interference on RF Energy Harvesting for IoT Devices	Sandy Saab (Notre Dame University, Lebanon); Nour Kouzayha, Joseph Costantine and Zaher Dawy (American University of Beirut, Lebanon)
10.30 - 11.00: coffee			
11:00-11:45	Keynote	Wirelessly Powered Sensing: Backscatter, Learning, and Computing	Kaibin Huang, The University of Hong Kong
11:46-12:30	Panel	Recent Advances and Challenges on Energy Harvesting Circuit and Communication Systems Design	Moderator: Daniel Benevides da Costa - Federal University of Ceará (UFC), Brazil. Panelists: Deniz Gunduz - Imperial College London, UK, Subhrakanti Dey - Uppsala University, Sweden, Alessandra Costanzo - University of Bologna, Italy
12.30 - 14.00: lunch			
14.00-14.45	Keynote	Signal and System Designs for Wireless Information and Power Transfer: From Theory to Prototyping and Experimentation	Bruno Clerckx; Imperial College London, UK

Current Activities (Years 2018-2019)

Special Issue on "Energy-Harvesting Cognitive Radio Networks"

- IEEE Transactions on Cognitive Communications and Networking

- Guest Editors:

    Daniel Benevides da Costa (Lead)

    George G. Karagiannidis

    Haiyang Ding

    Minghua Xia

    Octavia Dobre

    Prabhat K. Upadhyay

    Robert Schober

- 19 papers submitted, 9 papers accepted $\rightarrow$ Acceptance Rate $\approx$ 47%

- Publication Date: June 2019

Current Activities (Years 2018-2019)

IEEE PIMRC 2019: 2nd Workshop on Energy Harvesting Communication Networks

- Workshop Organizers:

  Daniel Benevides da Costa (Lead)

  Himal A. Suraweera

  Bruno Clerckx

- Submission deadline has been extended to 21 May (FIRM DEADLINE).

Next Activities

- Propose a Special Issue in JSAC (second semester of 2019) on the theme "Learning and AI for Energy Harvesting Communication Networks" (suggested title).

Thank you for your attention!!

For any suggestion, please contact the Chair at danielbcosta@ieee.org