SIG on “Energy-Harvesting Cognitive Radio Networks”

Presentation at IEEE GLOBECOM 2018
Outline

• Introduction

• Chair, Vice-Chairs, and Senior Advisors

• Founding Members

• Current Activities (Year 2018)

• Next Activities (Year 2019)
Introduction

• This SIG was created at the beginning of this year (2018).
• Cognitive Radio + Energy Harvesting:
  • Cognitive Radio:
    • Spectrum scarcity
  • Energy Harvesting:
    • Energy efficiency

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:

- 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
Current Activities (Year 2018)

1) 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
Current Activities (Year 2018)

• 19 submitted papers (Good Number of Submissions)
  • 1 paper accepted with Minor Revisions
  • 1 paper rejected by EiC – Out of Scope
  • 1 paper withdrawn
  • 16 papers Under Review
  • The remaining decisions will be sent very soon.
  • Acceptance rate should be around 40%.
  • Expected publication: first semester, 2019.
Current Activities (Year 2018)

2) IEEE PIMRC 2018: 1st Workshop on Energy Harvesting Communication 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
## Current Activities (Year 2018)

### W-K: 1st Workshop on Energy Harvesting Communication Networks

<table>
<thead>
<tr>
<th>Time</th>
<th>EDAS Number</th>
<th>Title</th>
<th>Authors with Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00</td>
<td></td>
<td>Time Reversal Scheme Using Multiple Transmit Antennas for SWIPT in Indoor Channel</td>
<td>Hongsun An and Hyuncheol Park (KAIST, Korea)</td>
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<tr>
<td>9.00-9.22</td>
<td>1570450009</td>
<td>Time Reversal Scheme Using Multiple Transmit Antennas for SWIPT in Indoor Channel</td>
<td>Hongsun An and Hyuncheol Park (KAIST, Korea)</td>
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<tr>
<td>9.23-9.45</td>
<td>1570459781</td>
<td>Exploitation of Time Modulated Arrays for Multisine Power Transmission</td>
<td>Francesco Mani (Università degli studi di Bologna, Italy); Diego Masotti (University of Bologna, Italy); Alessandra Costanzo (DEI, University of Bologna, Italy)</td>
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<tr>
<td>9.46-10.08</td>
<td>1570453000</td>
<td>Hybrid Satellite-Terrestrial Spectrum Sharing Systems with RF Energy Harvesting</td>
<td>Vibhumi Singh and Prabhat Kumar Upadhyay (Indian Institute of Technology Indore, India); Daniel Benevides da Costa (Federal University of Ceará (UFC) &amp; Area: Telecommunications, Brazil); Ugo Dias (University of Brasilia, Brazil)</td>
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<tr>
<td>9.09-10.30</td>
<td>1570453308</td>
<td>Positive Impact of Interference on RF Energy Harvesting for IoT Devices</td>
<td>Sandy Saab (Notre Dame University, Lebanon); Nour Kouzayha, Joseph Costantine and Zaher Dawy (American University of Beirut, Lebanon)</td>
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<td>10.30 - 11.00</td>
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<td>Coffee</td>
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<tr>
<td>11:00-11:45</td>
<td>Keynote</td>
<td>Wirelessly Powered Sensing: Backscatter, Learning, and Computing</td>
<td>Kaibin Huang, The University of Hong Kong</td>
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<tr>
<td>11:46-12:30</td>
<td>Panel</td>
<td>Recent Advances and Challenges on Energy Harvesting Circuit and Communication Systems Design</td>
<td>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</td>
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<td>12.30 - 14.00</td>
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<td>Lunch</td>
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<tr>
<td>14.00-14.45</td>
<td>Keynote</td>
<td>Signal and System Designs for Wireless Information and Power Transfer: From Theory to Prototyping and Experimentation</td>
<td>Bruno Clerckx; Imperial College London, UK</td>
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Next Activities

- Propose a Special Issue in IEEE Access (first semester of 2019)
- Propose the 2\textsuperscript{nd} Workshop on “Energy Harvesting Communication Networks”, IEEE PIMRC 2019.
Thank you for your attention!!