

**29th International Conference on Software,  
Telecommunications and Computer Networks**

**- SoftCOM 2021**

**September, 23– 25, 2021, Hvar, Croatia (hybrid conference)**

**Proceedings of the 12th Symposium on  
Green Networking and Computing (SGNC 2021)**

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**WELCOME**

**SYMPOSIUM  
INFORMATION**

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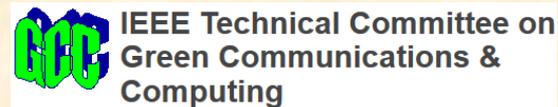
**PROGRAM**

**TRACKS**

**AUTHORS**



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# ORGANIZER MESSAGE FOR THE 12TH SYMPOSIUM ON GREEN NETWORKING AND COMPUTING (SGNC 2021)

## Foreword

*In order to enable a greener and smarter society, energy-related issues are becoming more and more relevant today and optimizing the energy consumption of Information and Communication Technology (ICT) infrastructure represents a critical enabler in developing such society. Although ICT improves our everyday lives and reshapes our daily work, ICT infrastructure consumes significant amounts of energy, placing a huge challenge on controlling vast electricity consumption and greenhouse gas emissions. Also, the ascending number of networked devices connected to the Internet which demands fulfillment of constantly growing data speeds, significantly contributes to the problem of energy consumption increase caused by ICT infrastructure.*

*To face this challenge, improved or completely new algorithms, tools, platforms, methodologies, systems and energy models must be devised and practically implemented. These Proceedings of the 12th Symposium on green networking and computing (SGNC 2021) gather works on different aspects of enabling technologies for improving the energy efficiency of ICT infrastructure, which are in line with the green networking and computing paradigm. The 12th in a row Symposium on green networking and computing (SGNC 2021) was organized in the frame of the 29th International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2021). The SGNC 2021 symposium was held on September 24, 2021. The organizer of the 12th Symposium on green networking and computing (SGNC 2021) are the Faculty of electrical engineering, mechanical engineering and naval architecture (FESB) of the University of Split, Croatia. The SGNC 2020 symposium is organized in cooperation with the IEEE ComSoc Technical Committee on Green Communications and Computing (TCGCC) and the Croatian ACM chapter (CRO ACM).*

*In the frame of the 12th SGNC 2021 symposium, three accepted papers have been presented in the Special session on green networking and computing. Topics analyzed in the presented papers include: methods for exploiting neural networks in radio-frequency identification (RFID)-based access control systems for improving energy efficiency of smart buildings, development of new and more energy-efficient RFID antenna and rectifier topology and development and assessment of two power amplifier operation modes in terms of energy efficiency.*

*I hope that readers of these proceedings will find the articles and presentations informative and that they will enjoy reading this feature topic devoted to the exciting fast-evolving field of green networking and computing. I would like to thank all the authors who submitted articles to this Symposium and to all presenters who give their presentations which significantly contribute to the international affirmation of this Symposium. Finally, I express my gratitude to all reviewers for their comments and valuable feedback on the submitted articles.*



[Josip Lorincz, PhD](#)

Symposium Chair

## PROCEEDINGS INFORMATION

### **Proceedings of the 12th Symposium on green networking and computing 2021 (SGNC 2021)**

International Conference on Software, Telecommunications and Computer Networks (*SoftCOM 2021*)

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# INTERNATIONAL SYMPOSIUM COMMITTEE

## ***Symposium chair:***

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*FESB, University of Split, Croatia*

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**Michele Rossi**, *University of Padova, Italy*

**Jinsong Wu**, *Universidad de Chile, Chile*

# SYMPOSIUM PROGRAM

## **SS5 – Special session on Green Networking and Computing**

***Session chair:*** Josip Lorincz, Ph. D., FESB, University of Split, Croatia

September 24, 2021, 14:00 – 15:30, Conference room Maestral

# ***Tracks***

- ❑ ***Special Session on Green Networking and Computing***

# SS5 – Special Session on Green Networking and Computing

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**Special session organizers:** *Josip Lorincz (University of Split, Croatia)*

**Special session chair:** *Josip Lorincz (University of Split, Croatia)*

## ❑ Experiments on energy optimization in smart residences

*René Nolio Santa Cruz, Hugo Sampaio, Ricardo N Boing and Carlos Becker Westphall (Federal University of Santa Catarina, Brazil)*

## ❑ Energy Harvesting by Optical Rectenna for RFID and IoT Applications

*Chokri Baccouch (National Engineering School of Tunis, Tunisia); Chayma Bahhar (MACS Research Laboratory, National Engineering School of Gabes, Tunisia); Hedi Sakli (EITA Consulting, France)*

## ❑ Hardware implementation of IDP and LINC methods using real power amplifiers

*Khaled Tahkoubit (University of Sciences and Technology of Oran, Mohammed Boudiaf (USTO-MB) & Laboratory of Coding LACOSI, Algeria); Hmaied Shaiek and Christophe Alexandre (CNAM, France); Salim Faci and Daniel Roviras (Cnam, France); Adda Ali-Pacha (University of Science and Technology of Oran(USTO), Algeria)*

# *Authors*

***A B C D E F G H I***

***J K L M N O P Q R***

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# A

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Shaiek, Hmaied

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## **Alexandre, Christophe**

Hardware implementation of IDP and LINC methods using real power amplifiers

## **Ali-Pacha, Adda**

Hardware implementation of IDP and LINC methods using real power amplifiers

# B

## **Baccouch, Chokri**

Energy Harvesting by Optical Rectenna for RFID and IoT Applications

## **Bahhar, Chayma**

Energy Harvesting by Optical Rectenna for RFID and IoT Applications

## **Becker Westphall, Carlos**

Experiments on energy optimization in smart residences

## **Boing, Ricardo N**

Experiments on energy optimization in smart residences

# F

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Hardware implementation of IDP and LINC methods using real power amplifiers

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Hardware implementation of IDP and LINC methods using real power amplifiers

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## **Sakli, Hedi**

Energy Harvesting by Optical Rectenna for RFID and IoT Applications

## **Sampaio, Hugo**

Experiments on energy optimization in smart residences

## **Santa Cruz, René Nolio**

Experiments on energy optimization in smart residences

## **Shaiek, Hmaied**

Hardware implementation of IDP and LINC methods using real power amplifiers

# T

## **Tahkoubit, Khaled**

Hardware implementation of IDP and LINC methods using real power amplifiers



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