



## **Commission GASS 2021 Report**

### **Commission D**

#### **1. Results of Election of Vice-Chair**

There were three candidates for the position of the Vice Chair. In this year, voting was 100% online and no paper ballots. Deadline of voting was until the end of Monday's CCA meeting.

Atsushi Kanno (Japan) : 14 votes

Hossein Asghari (USA) : 13 votes

Young-Kai Chen (USA) : not enough and no voting date from URSI secretariat

After discussion of election results of all commission in URSI council II on Tuesday, Atsushi Kanno was elected Vice Chair.

#### **2. Results of Election of Early Career Representative**

There were two candidates for the position of the ECR. The election rule was the same as VC.

Valentina Palazzi (Italy) : 21

Ricardo Correia (Portuguese) : 12

As a result of the election and discussion, Valentina Palazzi was elected ECR.

#### **3. Appointment of Associate Editor for *Radio Science Bulletin***

Atsushi Kanno accepted to act as Associate Editor for Radio Science Bulletin.

#### **4. Updates/Status of Working Groups**

D.1 RFID Technologies and Privacy of data

Chair : Smail Tedjini (France)

Vice-Chair : Gaetano Marrocco (Italy)

D.2 Wireless Power Transfer Technologies and Applications

Chair: Dr. N. Shinohara (Japan)

Vice-Chair: Dr. A. Georgiadis (Netherland)

We wish to continue and expect to produce a document/report for the next triennium. There is no change in the representative of this WG, but we plan to organize workshop in next URSI flagship meeting.

#### **5. Updates to Terms of Reference of Commission**

New terms, last sentence. was proposed and accepted.

The Commission promotes research and reviews new developments in :

- Electronic systems that push beyond current frontiers;
- Microwave, millimeter wave and THz devices, circuits and systems;
- Nanotechnologies and nanoelectronics;
- Combined and hybrid photonic and electronic systems;
- Photonic devices, systems, and their applications;
- Photonic signal processing schemes, regardless of frequency of signal processed;



- Optoelectronic systems, plasmonics, and electro-optics;
- Physics, theoretical modeling, and numerical simulation of all of the above.

The commission focuses on electronic and photonic devices, circuits, systems and wireless solutions to address applications in particular 6G and beyond, IoT, Sensors, Artificial Intelligence, energy harvesting, WPT, Pandemics/disaster management.

La Commission tend à promouvoir les recherches et à faire le point des nouveaux développements dans les domaines :

- Des systèmes électroniques qui repoussent les frontières actuelles;
- Des dispositifs, circuits et systèmes au fréquences micro-ondes, millimétriques et THz;
- Des nanotechnologies et de la nanoélectronique;
- Des systèmes photoniques et électroniques combinés et hybrides;
- Des dispositifs et systèmes photoniques ainsi que leurs applications;
- Des nouveaux principes de traitement des signaux photoniques, quelle que soit la fréquence du signal traité;
- Des systèmes optoélectroniques, plasmoniques et électro-optiques;

Relevant de la physique, de la modélisation théorique et de la simulation numérique de tout ce qui précède;

La Commission se concentre sur les dispositifs, circuits et systèmes électroniques et photoniques dans le but de mettre en œuvre des technologies relevant de la 6G et des futures générations de téléphonie mobile, de l'intelligence artificielle, des capteurs sans fils et de l'Internet des objets, de la récupération d'énergie et du transfert d'énergie sans fil, des technologies quantiques, et pour la gestion des pandémies et catastrophes.

## **6. Meetings proposed to be supported in the coming triennium**

We discussed the meetings which Commission D should support. Based on past triennium information, we choose the following meetings to be supported.

- Metamaterials 2021, 15th International Congress on Artificial Materials for Novel Wave Phenomena, New York, USA, 20-25 Sep. 2021, <https://congress.metamorphose-vi.org/>
- ISAP2021, Oct.19-22, 2021, Taipei, <http://www.isap2021.org/>
- ISAP2022, Sydney, <https://isap2022.org/>
- IEEE RFID-TA2021, Oct.6-10, 2021, Delhi, India, <https://2021.ieee-rfid-ta.org/patrons/>
- URSI-JRSM2022, Tokyo, Japan, Sep.1-2, 2022
- APMC2021, Nov.28-Dec.1, Brisbane, <http://apmc2021.org/>
- APMC2022, Tokyo

## **7. Report and comments on the scientific program of the Commission for the current GASS**

N/A

## **8. Proposed sessions for the next GASS**

All attendees agreed to propose special session proposals and suggestions related to their field of expertise and based on past URSI flagship meetings. After AT-AP-RASC2022, we agreed to start to make proposal of sessions for GASS2023.



## 9. Proposed sessions for the AT-RASC

AT-RASC2022 was renamed AT-AP-RASC2022 hybrid. For the AT-AP-RASC2022, the following sessions and workshops will be proposed.

[Workshop D1] RFID Technologies and Privacy of Data

Conveners: Smail Tedjini, Université Grenoble-Alpes, France, Gaetano Marrocco, University of Rome Tor Vergata, Italy

[Workshop D2] Wireless Power Transfer Technologies and Applications

Conveners: Naoki Shinohara, Kyoto University, Japan, Apostolos Georgiadis, Netherland

[Session D1] Convergence of photonics and radio systems Towards 6G

Conveners: Hiroshi Murata, Mie University, Japan, Toshimasa Umezawa, NICT, Japan

[Session D2] Photonic signal processing, real-time instruments and biomedical imaging

Convener: Hossein Asghari, Loyola Marymount University, USA, Masayuki Suzuki, Doshisha University, Japan, Chao Wang, University of Kent, UK

[Session D3] Harmonic Transponders

Conveners: Valentina Palazzi, Univ. of Perugia, Italy, Smail Tedjini, Université Grenoble-Alpes, France  
[Session D4]

"Multiphysics modelling in radio frequency nanoelectronics",

Conveners : Prof. Qiwei Zhan, Zhejiang University, Prof. Wei Sha, Zhejiang University, and Prof. Qing Huo Liu, Duke University

[Session D5] Plasmonics

Conveners: Maurizio Burla, ETHZ, Switzerland, Prof. David Marpaung, University of Twente, the Netherland

[Session D6] Photonics and electronics for space applications

Conveners : Morio Toyoshima, NICT, Japan, Kyriaki Minoglou, ESA/ESTEC, Netherland

[Session D7] Electronic and photonic components for THz Communications

Conveners : Thomas Kurner, Univ. Braunschweig, Germany, Tetsuya Kawanishi, Waseda University, Japan

[Session D8] [Session D8] Energy Harvesting for IoT Applications

Conveners: Kyriaki Niotaki, Télécom Paris, Paris, France, Valentina Palazzi, Univ. of Perugia, Italy

[Session D9] Open Session

Conveners: Naoki Shinohara, Kyoto University, Atsushi Kanno, NICT, Japan

## 10. Other business

N/A