



Stimulating and co-ordinating, on an international basis, studies, research, applications, scientific exchange, and communication in the fields of radio science

Brussels, 3 December 2019

# URSI Benelux Forum 2019

*"Interaction with your environment through Radio Science"*

09h00-09h30 ["Welcome & introduction – URSI 100 years"](#)  
Peter Van Daele, President URSI Belgium & URSI Secretary General

*Session Chair: Peter Van Daele, President URSI Belgium & URSI Secretary General*

09h30-10h15 Keynote 1: ["Design, manufacturing and characterization of wearable textile nodes"](#)  
Hendrik Rogier, imec – Ghent University

10h15-10h30 Coffee break

*Session Chair: Emmanuel Van Lil, KU Leuven, Honorary member URSI Belgium*

10h30-11h15 Keynote 2: ["Radio Science for Space Weather"](#)  
Viviane Pierrard – Royal Belgian Institute for Space Aeronomie

11h15-12h00 Keynote 3: ["Enhancing oncological treatments by radio frequency hyperthermia"](#)  
Sergio Curto, Radiation Oncology, Erasmus MC Cancer Institute

12h00-13h00 Poster Session 1 & Lunch break

*Session Chair: Stefan Wijnholds, ASTRON, President URSI Netherlands, URSI Assistant Secretary General*

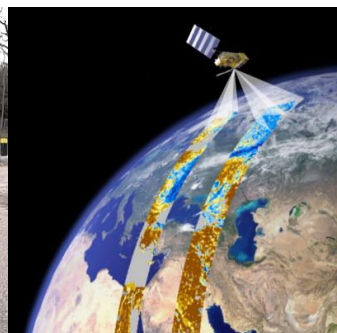
13h00-13h45 Keynote 4: ["The relation between radio science and smart cities"](#)  
Bart Braem, imec – University of Antwerp

13h45-14h30 Keynote 5: ["The Galactic/Extragalactic Ultra long duration balloon Spectroscopic Terahertz Observatory \(GUSTO\) -project"](#)  
Jan Geralt, SRON

14h30-15h15 Keynote 6: ["Conformity Testing according to the RED \(Radio\) Directive for Combined Products"](#)  
Filip Nauwelaerts, Labo De Nayer

15h15-16h00 Coffee break & Poster Session 2

16h00-17h00 Best Poster Award & Networking drink





Stimulating and co-ordinating, on an international basis, studies, research, applications, scientific exchange, and communication in the fields of radio science

Brussels, 3 December 2019

## Posters Session

### Commission A: Electromagnetic Metrology, Electromagnetic measurements and standards

1. [Continuous and automated measurement set-up to characterize the accelerated ageing of capacitors under thermal and electrical stress](#)  
Liu, Hao; Vandenbosch, Guy; Pissoort, Davy; Claeys, Tim  
*KU Leuven, Belgium*
2. [Reduction of substrate mode coupling in on-wafer measurements](#)  
Schmidt, Robin (1), (2)  
*(1) KU Leuven, Belgium; (2) Keysight Technologies, Belgium*

### Commission B: Fields and waves, Electromagnetic theory and applications

3. [A Wearable Rectenna with Combined Feeding and Rectifying Network](#)  
Chen, Zhensheng; Zhang, Jiahao; Vandenbosch, Guy  
*KU Leuven, Belgium*
4. [Towards the Realization of the E-Wall Concept at mm-waves](#)  
Salarrahimi, Marzieh (1); Geurts, Marcel (2); Vandenbosch Guy A. E. (1)  
*(1) KU Leuven, Belgium; (2) NXP Semiconductors, Nederland*
5. [Novel Bow-Spiral Antennas: Improve Impedance Matching and Power Endurance for Jamming Applications](#)  
Tran, Thi; Piette, Marc  
*Royal Military Academy, Belgium*
6. [Mechanically Flexible All-Textile Cavity-Backed Slot Antenna for Body-Worn UWB Localization](#)  
Van Baelen, Dries; Van den Brande, Quinten; Lemey, Sam; Verhaevert, Jo; Rogier, Hendrik  
*Ghent University, Belgium*
7. [A Metamaterial Based Frequency Reconfigurable MIMO System with Pattern Diversity](#)  
Zhang, Jiahao (1); Chen, Zhensheng (1); Yan, Sen (2); Vandenbosch, Guy A. E. (1)  
*(1) KU Leuven; (2) Xi'an Jiaotong University, China*
8. [Low-Profile Circularly Polarized Array with Gain Enhancement and RCS Reduction Using Polarization Conversion EBG Structures](#)  
Zheng, Qi (1); Guo, Chenjiang (2); Ding, Jun (2); Vandenbosch, Guy A. E.  
*(1) KU Leuven, Belgium; (2) Northwestern Polytechnical University, China*

Stimulating and co-ordinating, on an international basis,  
studies, research, applications, scientific exchange, and  
communication in the fields of radio science



# Brussels, 3 December 2019

## Commission C: Radiocommunication Systems and Signal Processing

9. [Obtaining a Stack of Bistatic SAR Images using Sentinel-1A](#)  
Bettens, Frédéric; Neyt, Xavier  
*Royal Military Academy, Belgium*
10. [Developing better strategies with Reinforcement Learning](#)  
Boeckx, Koen  
*Royal Military Academy, Belgium*
11. [Fixed mmWave Multi-User MIMO: performance analysis and proof-of-concept architecture](#)  
Colpaert, Achiel; Vinogradov, Evgenii; Pollin, Sofie  
*KU Leuven, Belgium*
12. [Hardware Design and Realization for Blind Spot Detection via Bluetooth Low Energy](#)  
De Raeve, Nick; De Schepper, Matthias; Van Torre, Patrick; Verhaevert, Jo; Rogier, Hendrik  
*Ghent University, Belgium*
13. [Buried Target Indicators Detection Using LWIR/SWIR Sensors](#)  
Idrissa, Mahamadou; Neyt, Xavier  
*Royal Military Academy, Belgium*
14. [Coded-Radar for Interference Suppression in Super-Dense Environments](#)  
Kumbul, Utku (1); Uysal, Faruk (1); Yarovoy, Alexander (1); Vaucher, Cicero (1), (2)  
*(1) TU Delft, Nederland; (2) NXP Semiconductors, Nederland*
15. [Exploiting Wi-Fi beacons for UAV position broadcasting](#)  
Minucci, Franco; Vinogradov, Evgenii; Pollin, Sofie  
*KU Leuven, Belgium*
16. [Performance of Offline Adaptive Filters Applied to Railway Security](#)  
Nogueira, Artur (1), (2); Deniau, Virginie (1); Resende, Ursula (3); Adriano, Ricardo (2)  
*(1) IFSTTAR, France; (2) UFMG, Brazil; (3) CEFET-MG, Brazil*
17. [Life-saving babbling: detecting Pre-Symptomatic Hypobaric Hypoxia by Voice Stress Analysis.](#)  
Van Puyvelde, Martine (1), (2); Neyt, Xavier (2); Pattyn, Nathalie (2)  
*(1) Vrije Universiteit Brussel, Belgium; (2) Royal Military Academy, Belgium*
18. [Fall Detection of a Person in a Reverberant Environment Using Bistatic Radar](#)  
Yusuf, Marwan  
*Ghent University-IMEC, Belgium*

Stimulating and co-ordinating, on an international basis, studies, research, applications, scientific exchange, and communication in the fields of radio science



# Brussels, 3 December 2019

## Commission D: Electronics and Photonics

### 19. [Ultra-Broadband Phase-Shifters for 5G Handsets](#)

Vilela Pinto dos Anjos, Eduardo; M. M.-P. Schreurs, Dominique; Vandenbosch, Guy A. E.  
*ESAT-TELEMIC/KU Leuven, Belgium*

## Commission E: Electromagnetic Environment and Interference

### 20. [Eavesdropping Co-located Identical Video Display Systems Exploiting their Electromagnetic Leakage Channels](#)

De Meulemeester, Pieterjan (1), (2); Scheers, Bart (1); Vandenbosch, Guy A. E. (2)  
*(1) Koninklijke Militaire School, Belgium; (2) KU Leuven, Belgium*

### 21. [Impact of Railway transient EM interferences on the LTE Quality Indicators](#)

Stienne, Olivier (1) ; Deniau, Virginie (1) ; Simon, Eric (2); Fryziel, Michel (3)  
*(1) IFSTTAR, France; (2) IEMN - Université Lille, France ; (3) IRCICA - Université de Lille, France*

## Commission F: Wave Propagation and Remote Sensing (planetary atmospheres, surfaces and subsurfaces)

### 22. [Finding Indicators To Detect Fake Access Point Attacks On the Physical Layer](#)

Amoordon, Andy; Deniau, Virginie; Gransart, Christophe; Gesnot, Corentin  
*IFSTTAR, France*

### 23. [Path Loss Modelling at 868 MHz in the Hull of a Ship](#)

De Beelde, Brecht; Yusuf, Marwan; Tanghe, Emmeric; Plets, David; Joseph, Wout  
*Ghent University – Imec, Belgium*

### 24. [Roadmap to model LEO links attenuation by integrating Numerical Weather Predictions, ST-MultiEXCELL, and traffic radar data](#)

Razavian, Mojtaba ; Quibus, Laurent ; Vanhoenacker-Janvier, Danielle  
*Université catholique de Louvain, Belgium*

### 25. [The SRSAR Project: Detecting Changes by means of the Copernicus Sentinels](#)

Stasolla, Mattia; Neyt, Xavier  
*Royal Military Academy, Belgium*

### 26. [Real-Time Algorithm to Detect Command Wires and First Results](#)

Yvinec, Yann; Druyts, Pascal  
*Royal Military Academy, Belgium*

## Commission J: Radio Astronomy

### 27. [LaRa after RISE: expected improvement in the Mars rotation and interior models.](#)

Péters, Marie-Julie (1); Le Maistre, Sébastien (1); Yseboodt, Marie (1); Marty Jean-Charles (2); Rivoldini, Attilio (1); Van Hoolst, Tim (1); Dehant, Véronique (1)  
*(1) Royal Observatory of Belgium ; (2) CNES, France*