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Tuesday, October 26

Tuesday, October 26 9:45 - 11:05

S1: Session 1: Modulation and Signal Processing for PLC

Page: Chair: Sicong Liu (Xiamen University, China)

1 **9:45 Comparison Between Different Peak-To-Average Power Ratio Reduction Techniques**

Philipp Horwat and Dennis Stamm (Hochschule Ruhr West, Germany); Gerd Bumiller (Hochschule Ruhr West & University of Applied Sciences, Germany)

7 **10:05 Power Line Communication for Grid Monitoring: A Prototype Based on Software Defined Radio**

Stephan F. Pflutschinger (Offenburg University of Applied Sciences, Germany); Jens Lottermoser (Hochschule Offenburg, Germany); Joerg Bausch (Universität Karlsruhe, Germany)

13 **10:25 A Simple Physical-Layer Key Generation Scheme for Power-Line Transmission**

Werner Henkel and Ha Kim (Jacobs University Bremen, Germany); Abderraheem Turjman (Hochschule Bremen / Jacobs University Bremen, Germany); Mathias Bode (Jacobs University, Germany)

19 **10:45 A Subcarrier Permutation Scheme for Noise Mitigation and Multi-Access in Powerline Channels**

Oluwafemi Ibrahim Kolade (University of the Witwatersrand, South Africa); Adnan M. Abu-Mahfouz (CSIR NextGen Enterprises and Institutions, South Africa); Ling Cheng (University of the Witwatersrand, South Africa)

Tuesday, October 26 11:35 - 12:55

S2: Session 2: Noise Mitigation and Modelling

Chair: Gerd Bumiller (Hochschule Ruhr West & University of Applied Sciences, Germany)

25 **11:35 PLC-xDSL Dynamic Interference Mitigation**

Andreas Engelen (Devolu AG, Germany); Nico Weling (devolu AG, Germany)

- 31 **11:55 Design and Development of a Multi Port Powerline Communication Network Analyzer for Measurements of Low Voltage Grid Components**
Axel Staubach and Holger Hirsch (University of Duisburg-Essen, Germany)
- 37 **12:15 Pilot-Free Channel Tracking for In-Band Full-Duplex Broadband Power Line Communications**
Vitali Korzhun and Andrea M Tonello (University of Klagenfurt, Austria)
- 43 **12:35 Mitigation of Coloured Impulsive Noise in Ofdm Receiver**
Sebastian Schaffenroth (OTH East Bavarian Technical University of Applied Sciences & Aia Automation Institute, Germany); Hans-Peter Schmidt (OTH East Bavarian Technical University of Applied Sciences & aia Automation Institute, Germany); Alexander Koelpin (BTU & Chair for Electronics and Sensor Systems, Germany)

Tuesday, October 26 15:05 - 16:25

S3: Session 3: Hybrid Technologies & Machine Learning Applications in PLC

Chair: Francisco J. Cañete (Universidad de Málaga, Spain)

- 49 **15:05 On the New Developments in ITU-T G.hn Standard: Use Cases, Requirements, and Solutions**
George Hallak (Devolo AG, Germany); Marcos Vazquez (MaxLinear, Spain); Anil Mengi (Devolo AG, Germany); Livia Rosu (MaxLinear, Spain)
- 55 **15:25 Capacity Learning for Communication Systems over Power Lines**
Nunzio Letizia and Andrea M Tonello (University of Klagenfurt, Austria)
- 61 **15:45 A Seamless Broadband PLC-VLC Transmission: Performance Evaluation and Dimensioning**
Yara Yaacoub (Institut National Des Sciences Appliquées & IETR, France); Fabienne Nouvel (INSA IETR RENNES, France); Jean-Yves Baudais (Univ Rennes, INSA Rennes, CNRS, IETR, France); Sylvain Haese (IETR-INSA Rennes, France)
- 67 **16:05 Performances of G3 PLC-RF Hybrid Communication Systems**
Alfredo Sanz (University of Zaragoza & Microchip Corp, Spain); David Sancho (Microchip Technology Inc., Spain); Jose Carlos Ibar (Microchip Technology Zaragoza Inc., Spain)

Wednesday, October 27

Wednesday, October 27 9:45 - 11:05

S4: Session 4: Measurements and Channel Modelling

Chair: Thokozani Calvin Shongwe (University of Johannesburg, South Africa)

73 **9:45 *Validation of a Transfer Function Computation Methodology in the PLC Frequency Range***

Arbia Haded (CentraleSupélec & EDF R&D, France); Cedric Lavenu (EDF R&D, France); Dominique Picard (CentraleSupélec, France); Mohammed Serhir (GeePs, CentraleSupélec, France)

78 **10:05 *Measurement Aided Training of Machine Learning Techniques for Fault Detection Using PLC Signals***

Yinjia Huo (University of British Columbia, Canada); Gautham Prasad (The University of British Columbia, Canada); Lutz Lampe (University of British Columbia, Canada); Victor C.M. Leung (Shenzhen University, China & The University of British Columbia, Canada); Rathinamala Vijay (DESE, IISC, Bangalore, India); Prabhakar TV (Indian Institute of Science, India)

84 **10:25 *Measurement of Notch Depths for G3-PLC***

Philipp Horwat (Hochschule Ruhr West, Germany); Gerd Bumiller (Hochschule Ruhr West & University of Applied Sciences, Germany)

90 **10:45 *An On-Line Measurement Approach for EMI Filter Characterization***

Christoph Szymczyk and Christoph Nieß (Hochschule Ruhr West, Germany); Gerd Bumiller (Hochschule Ruhr West & University of Applied Sciences, Germany)

Wednesday, October 27 11:35 - 12:55

S5: Session 5: Network Layer Techniques in PLC Systems

Chair: Alfredo Sanz (University of Zaragoza & Microchip Corp, Spain)

96 **11:35 *Network Attack Analysis of an Indoor Power Line Communication Network***

Emmanuel C Uwaezuoke and Theo G. Swart (University of Johannesburg, South Africa)

102 **11:55 A Comparative Study on Class AB and Class D Amplifier Topologies for High Temperature Power Line Communication Circuits**

Martijn Duraij, Yudi Xiao, Tiberiu-Gabriel Zsurzsan and Zhe Zhang (Technical University of Denmark, Denmark)

108 **12:15 Planning Tool for Fast Roll-Out of G.hn Broadband PLC in Smart Grid Networks: Evaluation and Field Results**

George Hallak, Marcel Berners and Anil Mengi (Devolo AG, Germany)

114 **12:35 Data Analytics in G3-PLC Deployments for Coverage Prediction**

Francesco Marcuzzi (Alpen-Adria-Universitaet, Austria); Andrea M Tonello (University of Klagenfurt, Austria); Cedric Lavenu (EDF R&D, France)

Wednesday, October 27 16:15 - 17:15

RR: Recent Results and Industry Session

Chair: Eugen Mayer (Power Plus Communications, Germany)