SENSORCOMM 2019

The Thirteenth International Conference on Sensor Technologies and Applications

October 27 - 31, 2019

Nice, France

SENSORCOMM 2019 Editors

Jaime Lloret Mauri, Polytechnic University of Valencia, Spain
Manuela Vieira, ISEL-CTS/UNINOVA, Portugal
Amirali Soroush, CSIRO, Australia

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2019) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed with permission by Curran Associates, Inc. (2020)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Rapid Fabrication Approach of Graphene Sensor for Biological Application 1
Idris Musa and John Hedley

Adaptive Optical Sensors 7
Ivan Krejci and Karel Dvorak

Distributed Kalman Filter Investigation and Application to Leak Detection in Water Pipeline Monitoring Using Wireless Sensor Networks with Non-intrusive Sensors 13
Valery Nkemeni, Fabien Mieyeville, Jacques Verdier, and Pierre Tsafack

Simulating a Network: An Approach for Connecting Multiple SystemC Simulations 21
Thomas Wolfgang Pieber, Fikret Basic, Thomas Ulz, and Christian Steger

Improving the FLoRa Simulation Framework for the Performance Evaluation of IoT Scenarios 27
Jose-Manuel Martinez-Caro and Maria-Dolores Cano

Energy-Aware Grid Based Coverage Path Planning for UAVs 34
Alia Ghaddar and Ahmad Merei

Energy-aware Cross-level Model for Wireless Sensor Networks 46
Michel Bakni, Guillaume Terrasson, Octavian Curea, Alvaro Llaria, and Jessye Dos Santos

A Bandwidth-Efficient Soft-Decision Scheme for Distributed Binary Detection in Sensor Networks 52
Victor Cheng, Tsang-Yi Wang, and Hao Wang

Design and Development of Medical Sensor Networks for Differently Abled Persons 55
Veeraprathap Veerabhadraiah, Fazaluddeen Doddahosur Mohammad Jamal, and Narendra Kumar Guru Murthy

Proposition of a Smart Environment Architecture for Ressources Monitoring and Rural Activities Management 62
Thierry Antoine-Santoni, Bastien Poggi, Dominique Federici, Francois-Marie Manicacci, Jean-Sebastien Gualtieri, and Antoine Aiello

Wearable Fall Detection System Using Barometric Pressure Sensors and Machine Learning 69
Yingnan Sun, Frank P.-W. Lo, Surapa Thiemjarus, and Benny Lo

Design, Development and Field Deployment of a Low-cost Distributed Wireless Sensor Network System for Real-time Hydraulic Fracturing Monitoring in Mines 74
Amirali Soroush and Wen Shen (Vincent) Mow

Theoretical Models for Underwater RFID 80
Caroline Peres, John Buckley, Nadeem Rather, and Brendan O'Flynn

A Battery-Less NFC Sensor Transponder for Museum Artefact Monitoring - A Review of NFC Sensor Technology and a Proposed Solution 89
Dinesh R. Gawade, John Buckley, Nadeem Rather, Steffen Ziemann, Alex Zabeo, John Barton, Daniela Iacopino, Katharina Schuhmann, Manfred Anders, Micheal Burke, Aidan Quinn, and Brendan O'Flynn

An OPC UA PubSub MQTT Configuration Tool 97
Zepeng Liu and Patrick Bellot