

Dr. Anas Hamoui
1973 - 2011



FROM THE EXECUTIVE COMMITTEE

It is with deep regret and great sadness that we announce the passing of our esteemed colleague and friend, Professor Anas Hamoui from McGill University. We will all remember him, a dynamic young researcher closely involved in the scientific community. Having received his Ph.D. from the University of Toronto in 2004, he joined the Department of Electrical and Computer Engineering (DECE) at McGill University in September of that year as assistant professor, and joined the ReSMiQ soon after in January 2005. He was the representative of the McGill members on the executive committee of our center since 2007. Upon his arrival he took over the co-direction of IEEE SSCS Montréal Chapter (www.ieee.ece.mcgill.ca) with Professor M. Sawan of the École Polytechnique. Professor Hamoui received numerous awards including professor of the Year at the DGEI of McGill for two consecutive years and the award for outstanding IEEE-SSCS chapter in 2007. We have witnessed his dedication within Technical Committees of the IEEE CASS, on the editorial board of prestigious journals and on the organizing committees of many conferences including IEEE-NEWCAS, -BIOCAS and -ICECS. Our warmest thoughts go to his family to whom we send our deepest condolences.

Best regards,
M. Sawan, director

RESMIQ'S ACTIVITIES

ReSMiQ / COFAMIC Seminar

LAIC based System Design: A Thermo-mechanical and Power Issues by Ahmed Lakhssassi, Decembre 7 at 1:30pm, UQAM

[More details](#)

Message to members: we will be pleased to publish your news in forthcoming issues, let us know.

NEWS FROM OUR MEMBERS

EXPOSURE

Dr. Sawan from Polytechnique offered two conferences in Morocco as part of a project of the *Association universitaire francophone (AUF)* in collaboration with CAE-LETI (Grenoble), Tunisia (INSAT) and Morocco (ENSA).

INVOLVEMENT

Dr. Massicotte from UQTR is a member of the evaluation committee for the new researchers start-up program of the FQRNT.

ACHIEVEMENT

Dr. Massicotte from UQTR was appointed director of the GREI - Research Group in Industrial Electronics (www.grei.ca) for five years from June 2011 to May 2016.

GET READY!

NEWCAS 2012

10th IEEE International NEWCAS Conference
June 17 - 20, 2012, Montréal, Canada
www.newcas2012.org

SPOTLIGHT ON OTHER CONFERENCES

2011 International Conference on Electronics, Circuits and Systems (ICECS), December 7 - 9, 2011, Beirut, Lebanon.

[More details](#)

23rd International Conference on Microelectronics (ICM), December 19 - 22, 2011, Hammamet, Tunisia.

[More details](#)

2012 International Symposium on Circuits and Systems (ISCAS 2012), May 20 - 22, 2012, Seoul, Korea.

[Tous les détails](#)

55th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2012), August 5 - 8, 2012, Boise, Idaho, USA.

[Tous les détails](#)

RESEARCH CONTRIBUTIONS

Some of the research achievements of our members.
This month, two major contributions are presented.

1. Maurice C. Cheung, Ka Yi Yung, Huina Xu, Nadine D. Kraut, Ke Liu, **Vamsy P. Chodavarapu**, Alexander N. Cartwright, Frank V. Bright "Porous Nanostructured Encapsulation and Immobilization Materials for Optical Biosensors" IEEE Journal of Selected Topics in Quantum Electronics, Invited Article- Special Issue on BioPhotonics, online.

In this paper authors describe nanoporous materials, with meso-/micro- scale pores, that provide a highly versatile and useful platform for immobilization and encapsulation of recognition elements for optical chemical and biological sensors (see Figure) . Specifically, authors put forward sol-gel process derived xerogels, electrochemical

wet and dry etched porous silicon and holographically ordered porous polymer gratings (Bragg structures). These materials offer several advantages including low cost, ease of fabrication, high surface to volume ratio, biocompatibility, functionality with various recognition elements, and the ability to modify the material surface/volume properties and porosity.

It has been discussed that several optical sensing modalities can be employed using nanoporous materials. These modalities include luminescence emission and lifetime sensing, diffraction, refractive index modulation, colorimetry, ratiometry, and reflection (or transmission). Finally, authors review emerging techniques employing these materials that aim towards improving detection efficiency, sensitivity and selectivity in optical sensors including plasmonics, photonic bandgap structures, and molecular imprinted materials.

2. Jin He, M. **Omair Ahmad**, **M.N.S. Swamy**, *Extended-aperture angle-range estimation of multiple Fresnel-region sources with a linear tripole array using cumulants*, Signal Processing, online.

This paper presents a cumulant-based algorithm to achieve aperture extension for estimating the directions-of-arrival (DOAs) and the ranges of multiple Fresnel-region sources using a linear tripole array. The proposed algorithm defines two cumulant-based matrices, from which the DOA and the range of each source are estimated from the source's tripole steering vector using the ESPRIT technique. These are then used as coarse reference estimates to disambiguate the cyclic phase ambiguities induced from the spatial phase factors when the inter-sensor spacing exceeds a half wavelength. The algorithm does not require two-dimensional searching or parameter pairing, and can resolve $3(L-1)$ sources with L tripoles. The extension of the proposed algorithm by formulating multiple cumulant matrices and using parallel factor (PARAFAC) analysis is also presented. Simulation results are provided demonstrating the significant improvement in the performance over that of several existing algorithms.

