



4th INTERNATIONAL CONFERENCE OF THE CAMEROON PHYSICAL SOCIETY



IYL 2015 IN AFRICA TECHNOLOGICAL SOLUTIONS FOR DEVELOPMENT: SENSORS, SOLAR ENERGY AND TELECOMMUNICATIONS

Co-organized by Yanne K. Chembo, CNRS & Paul Wofo, University of Yaoundé I

Program for November 24th-27th, 2015



INTERNATIONAL
YEAR OF LIGHT
2015



Tuesday, November 24th

(Centre for German-African Scientific Cooperation*, University of Yaoundé I)

SESSION 1 : LECTURES ON PHOTONICS RESEARCH I		
09h00	10h00	Paul Wofo (Univ. Yaoundé I, Cameroon) <i>How to write a scientific paper</i>
10h00	11h00	Sifeu Takougang and Paul Wofo (Univ. Maroua/ Univ. Yaoundé I, Cameroon) <i>Semiconductor lasers : physical principles, modelling, applications and some research issues</i>
11h00	12h00	Talla Mbé and Yanne Chembo (Univ. Yaoundé I, Cameroon & CNRS, France) <i>Optoelectronic oscillators : physical principles, modelling, applications and some research issues</i>
12h00	13h00	PAUSE
SESSION 2: LECTURES ON PHOTONICS RESEARCH II		
13h00	14h00	Talla Mbé and Paul Wofo (Univ. Yaoundé I, Cameroon) <i>Opto-mechanical oscillators : physical principles, modelling, applications and some research issues</i>
14h00	15h00	Martin Kamta (Univ. Ngaoundéré, Cameroon) <i>Photovoltaic cells : physical principles, modelling, applications and some research issues</i>

*This centre is located between the Polytechnic School and the Faculty of Medicine.

Wednesday, November 25th

(Franco Hotel, Yaoundé)

09h00	9h30	Yanne K. Chembo (CNRS & FEMTO-ST, France) <i>IYL in Africa: challenges and opportunities</i>
SESSION 3 : OPTOELECTRONICS AND OPTOMECHANICS		
09h30	09h50	Sifeu Takougang Kingni (Univ. Maroua, Cameroon) <i>Dynamics of ring lasers submitted to optical/optoelectronic feedback and current modulation</i>
09h50	10h10	Momo Foutse (Univ. des Montagnes, Bagangté, Cameroon) <i>Edge-emitting semiconductor laser subject to non-sinusoidal excitation from three-dimensional autonomous system: numerical and electronic model analysis</i>
10h10	10h30	Talla Mbé (Univ. Yaoundé I, Cameroon) <i>Optomechanical oscillators: classical studies and applications</i>
10h30	10h50	Djorwe Phillippe (Univ. Yaoundé I, Cameroon) <i>Dynamics of optomechanical oscillators: semi-classical and quantum approaches.</i>
10h50	11h10	Gouné Géraud (Univ. Yaoundé I, Cameroon) <i>Experimental and theoretical study of an optoelectronic oscillator with laser-diode and Van der Pol nonlinearities</i>
11h10	13h00	PAUSE
13h00	13h30	Carlo Ioro <i>Challenges and opportunities in EU-Africa funding</i>
SESSION 4: ACTUATORS, ROBOTS AND CONTROL		
13h30	13h50	Abobda Théodore Lejuste (Univ. Yaoundé I, Cameroon) <i>A new model of artificial heart: dynamics and control</i>
13h50	14h10	Mando Kongne Alexandre (Univ. Dschang, Cameroon) <i>Structural stability of active electromagnetic bearing systems: Analytical investigations and numerical simulations</i>
14h10	14h30	Nwagoum Tuwa (Univ. Yaoundé I, Cameroon) <i>Analysis of an electrostatically actuated micro-plate subject to proportional-derivative controllers</i>
14h30	14h50	Tekou Nguazon (Univ. Dschang, Cameroon) <i>Finite-time sliding mode control of two simplest Jerk circuits with Pspice simulation</i>
14h50	15h10	Kengne Romanic (Univ. Dschang, Cameroon) <i>Periodicity and multistability in a new Jerk system</i>
15h10	15h20	Presentation of the SPIE student chapter
15h20	17h00	EXHIBITION OF THE SPIE STUDENT CHAPTER & POSTER SESSION

Thursday, November 26th

(Franco Hotel, Yaoundé)

09h00	09h30	Thibaut Sylvestre (CNRS & FEMTO-ST, France) <i>New type of light diffusion discovered in ultrathin optical fibers</i>
SESSION 5 : OPTICAL MATERIALS AND APPLICATIONS		
09h30	09h50	Ainamon Cyrille (IMSP, Porto-Novo, Benin) <i>Analysis of multi-resonance and chaotic behavior of the polarization in materials modeled by a Duffing equation with multi-frequency excitations</i>
09h50	10h10	Tchami Jean Hilaire (Univ. Ngaoundéré, Cameroon) <i>Determination in aqueous medium of the nature and concentration of suspended nanoparticles produced by pulsed laser ablation using a simple infrared turbidimeter and an optical fiber probe</i>
10h10	10h30	Alain Talla (Univ. Yaoundé I, Cameroon) <i>Applications of optical fibers to microwave photonics oscillators</i>
10h30	10h50	Maimounatou Boubakary (Univ. Maroua, Cameroon) <i>Comparative study of the quasi-phonons and the mode electric field in the LiTaO₃ and LiNbO₃ single crystals.</i>
10h50	11h10	Joel Tchahame (FEMTO-ST, France) <i>Dynamics of Brillouin scattering in photonic crystal fibers</i>
11h10	13h00	PAUSE
13h00	13h30	Alix Dehayem (Univ. Nairobi, Kenya) <i>Photonics for medical science in Africa</i>
SESSION 6: ENERGY HARVESTING AND POWER GRIDS		
13h30	13h50	Tchawou Tchuisseu Eder Batista (Univ. Illes Balears, Spain) <i>Effects of dynamic demand control appliances on the grid frequency stabilization</i>
13h50	14h10	Tchakui Murielle Vanessa (Univ. Yaoundé I, Cameroon) <i>Signal transmission and amplification in networks of EMS</i>
14h10	14h30	Dongmo Eric (Univ. Yaoundé I, Cameroon) <i>Controlling the Effects of asymmetry, transmission delay and noises on the stability of an elementary electricity network</i>
14h30	14h50	Ndemanou Boris (Univ. Yaoundé I, Cameroon) <i>Dynamics and magneto-rheological control of vibration of cantilever Timoshenko beam under earthquake loads</i>
14h50	15h10	Oumbé Tekam Gabin (Vrije Universiteit Brussel, Belgium) <i>From electromechanical energy harvesting to electromagnetic energy harvesting</i>
15h10	15h20	Presentation of the OSA student chapter
15h20	17h00	EXHIBITION OF THE OSA STUDENT CHAPTER & POSTER SESSION

Friday, November 27th

(Franco Hotel, Yaoundé)

09h00	09h30	Frédérique Vanholsbeeck (Univ. Auckland, New-Zealand) <i>FoodSafe: Towards near real time detection of bacteria for the food industry</i>
SESSION 7 : SOLAR CELLS		
09h30	09h50	Boussaibo André (Univ. Ngaoundéré, Cameroon) <i>Caractérisation expérimentale d'une interface électronique de couplage d'un panneau solaire photovoltaïque avec une unité de filtration membranaire d'eau saumâtre.</i>
09h50	10h10	Tsegaing Fabrice (Univ. Ngaoundéré, Cameroon) <i>Modélisation et simulation du couplage des capteurs solaires thermique et photovoltaïque pour le séchage-fumage du poisson</i>
10h10	10h30	Nzoundja Fapi (Univ. Ngaoundéré, Cameroon) <i>Conception d'un système photovoltaïque à moindre coût pour la conservation des vaccins d'un cheptel bovin dans les hauts plateaux de l'Adamaoua</i>
10h30	10h50	Ruben Zieba Falama (Univ. Maroua, Cameroon) <i>A new technique to improve the efficiency of a photovoltaic silicon solar cell based on the band-trap impact ionization phenomenon</i>
10h50	11h10	Mbakop Kwefeu Fabrice (Univ. Maroua, Cameroon) <i>Etude 1D d'un cristal photonique Ge/SiO₂ appliqué à un filtre spectral thermophotovoltaïque</i>
11h10	13h00	PAUSE
13h00	13h30	Vincent Uchekukwu (Redeemer's Univ., Nigeria) <i>Ratchets nonlinear dynamics and control</i>
SESSION 8: NONLINEAR AND COMPLEX DYNAMICAL SYSTEMS		
13h30	13h50	Louodop Fotso Patrick (Univ. Dschang, Cameroon) <i>Dynamics and indirect finite-time synchronization of delay-coupled systems</i>
13h50	14h10	Minwadinou Vincent (IMSP, Porto-Novo, Benin) <i>Effect of nonlinear dissipation on the basin boundaries of a driven two-well Modified Rayleigh-Duffing Oscillator</i>
14h10	14h30	Ngueuteu Mbouna (Univ. Yaoundé I, Cameroon) <i>Quasi-static transient and mixed modes oscillations induced by fractional derivatives effect on the slow flow near folded singularity and applications</i>
14h30	14h50	Fozin Fonzin Théophile (Univ. Dschang, Cameroon) <i>Multiscroll hyperchaos, bifurcations in the simplified Lorenz system via non-sinusoidal perturbations</i>
14h50	15h10	Kamdoum Tamba Victor (Univ. Dschang, Cameroon) <i>Dynamical analysis of Colpitts oscillator with magnetically coupled inductors</i>
15h10	15h20	Presentation of the IEEE student chapter
15h20	17h00	EXHIBITION OF THE IEEE STUDENT CHAPTER & POSTER SESSION