



Conference Program

**7th IMEKO TC19 Symposium on Environmental
Instrumentation and Measurements
(EnvIMEKO 17)**

August 3-4, 2017

Aguascalientes, Mexico



**UNIVERSIDAD
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Program Overview

	Thursday August 3rd	Friday August 4th
9:00-9:40	Registration	Registration
9:40-10:00	Inauguration	
10:00-11:00	Keynote 1	Keynote 2
11:00-11:30	Coffee break	Poster Session (while coffee break)
11:30-12:00	Session 1: Research Platforms	
12:00-14:00		Session 3: Nanotechnology
14:00-15:30	Lunch	Lunch
15:30-18:00	Session 2: Measuring Systems	
19:30-	Gala dinner	

Keynotes

Thursday August 3rd, 10 am. Auditorio IPADE

Keynote 1: Advances in spectrophotometry for characterizing pollutants within environmental networks

Prof. Aimé Lay-Ekuakille
University of Salento, Italy

The main objective of absorption spectrophotometer is to identify and characterize the gaseous or liquid analyses depending on their different interaction with used luminous radiation. There are several possible application fields of designed spectrophotometer, from gaseous pollutants detection, indoor air quality monitoring in particular environments as surgery rooms (where presence control of some gaseous components or dust is mandatory), detection of possible leaks and room climate deterioration, up to food quality control which characteristics depend on numerous components such as water, fat, proteins and carbohydrates. We specifically introduce the implementation of spectrophotometric measurements using LED technology as radiation source.

Short bio

Prof. Aimé Lay-Ekuakille is with the Department of Innovation Engineering, University of Salento (Italy). He works on the field of instrumentation and measurements related mainly to biomedical and environmental applications. Sensors and nanotechnology are also a niche of his research. He has authored and co-authored around 215 papers published on international journals and proceedings, and 5 books. He currently serves as Associate Editor of IEEE Sensors Journal, Measurement - Elsevier, and International Journal of Smart Sensors and Intelligent Systems. He is also the Chairman of Imeko TC19, and IEEE IMS TC34.

Friday August 4th, 10 am. Auditorio IPADE

Keynote 2: Indexes for quantifying the spectral coupling of atmosphere and photovoltaic system performance

Prof. Pedro M. Rodrigo

Universidad Panamericana, Mexico

Photovoltaic system performance is affected by changes in the input sunlight spectrum. Moreover, the different photovoltaic materials employed show different spectral responses, having different spectral behavior as a result. Many authors have developed methods and proposed indexes for quantifying the spectral influences in photovoltaic systems under the time-varying weather variables. These methods use different equipment, different procedures and assumptions, present different levels of complexity and accuracy, and have advantages and disadvantages in each specific context and application.

The indexes for quantifying the spectral coupling of atmosphere and photovoltaic system performance can be classified into photovoltaic device-independent indexes and photovoltaic device-dependent indexes. The first category implies that the index does not make use of any physical property of the analyzed photovoltaic device. In the second category, several properties of the analyzed device, such as the Spectral Response, are considered. Photovoltaic device-dependent indexes can be defined depending on the photovoltaic technology, the main differentiation being between non-concentrating flat-plate photovoltaic devices and concentrating devices. Concentrating devices use optical elements to concentrate the sunlight onto small high-efficiency solar cells.

An analysis of the available spectral indexes reveals that the choice of a suitable index depends on the specific application and its context. There are four key factors to be evaluated before the selection of a spectral characterization method: the analyzed PV technology, the required instruments, the availability of information on PV device spectral response and the required accuracy. Instruments such as spectroradiometers, short-circuit current meters or spectroheliometers (isotype cells), combined with reference pyranometers or pyrliometers, are commonly used for the spectral evaluation of photovoltaic devices.

Short bio

Pedro M. Rodrigo is an Associate Professor and Researcher at the Faculty of Engineering of Universidad Panamericana, Aguascalientes, Mexico. He received the MSc degree in Industrial Engineering from Universidad de Navarra (Spain) in 1998 and the PhD degree in Electronic Engineering from Universidad de Jaén (Spain) in 2013. From 2009 to 2014, he was a Research Assistant with the Centro de Estudios Avanzados en Energía y Medio Ambiente (CEAEMA) and with the Investigación y Desarrollo en Energía Solar y Automática group (IDEA) at Universidad de Jaén (Spain). His current research interest includes the characterization of concentrator photovoltaic and flat-plate photovoltaic systems.

Thursday August 3rd
Aula Aguascalientes

Session 1: Research platforms

Chair: Elvira Williams

11:30-12:00	Utilisation of the Jamaican SLOWPOKE reactor in environmental and health studies <i>Charles Grant, Johann Antoine</i> International Centre for Environmental and Nuclear Sciences, Jamaica
12:00-12:30	Definition of a simple index for the spectral characterization of photovoltaic systems <i>Pedro Rodrigo, Eduardo Fernández</i> Universidad Panamericana, campus Aguascalientes
12:30-13:00	Predicting climate conditions using Internet-of-Things and artificial hydrocarbon networks <i>Hiram Ponce, Sebastián Gutiérrez, Alejandro Montoya</i> Universidad Panamericana, campus Ciudad de México
13:00-13:30	Prototype for water reuse in house showers: savings and economics <i>Yamil Ramos-Mayol, Aldo Ruíz-Esparza, Sebastián Gutiérrez, Pedro Rodrigo</i> Universidad Panamericana, campus Aguascalientes
13:30-14:00	On the characterization strategy of a voter transition method and its influence on social choice <i>Miguel Alcaraz, Carolina Del-Valle-Soto, Jafet Rodriguez</i> Universidad Panamericana, campus Guadalajara

Thursday August 3rd, Aula Aguascalientes

Session 2: Measuring Systems

Chair: Helen Asemota

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| 15:30-16:00 | Image analysis applied to a freeze-concentration water purification system
<i>José Pardo, Ernesto Moya-Albor, Germán Ortega and Jorge Brieva</i>
Universidad Panamericana, campus Ciudad de México |
| 16:00-16:30 | Adopting bootstrap for the uncertainty estimation of road traffic noise measurement
<i>Consolatina Liguori, Antonio Pietrosanto, Alessandro Ruggiero, Domenico Russo, Paolo Sommella</i>
University of Salerno, Italy |
| 16:30-17:00 | Adopting smart metering RF networks for particulate matter distributed measurements
<i>Marco Carratù, Matteo Ferro, Antonio Pietrosanto, Paolo Sommella</i>
University of Salerno, Italy |
| 17:00-17:30 | Analysis of vibrations in a wind turbine excited by earthquakes
<i>J. Enriquez-Zárate, R. Velázquez</i>
Universidad Panamericana, campus Aguascalientes |
| 17:30-18:00 | Accurate classification of bioclimatic data: spatial analysis
<i>Giuseppe Passarella, Emanuele Barca, Delia Bruno, Sabino Maggi, Rita Masciale, Aimé Lay-Ekuakille</i>
CNR-IRSA Water Research Institute |

Friday August 4th
Aula Aguascalientes (Lobby)

Poster Session

Chair: Ramiro Velázquez

- P1 | Determination of trace elements in blood by total reflection X-ray fluorescence (TXRF) analysis
Haile Dennis, Charles Grant, Tracey-Ann Warner, Gerald Lalor
University of the West Indies, Jamaica
- P2 | Passive vibration control in civil structures: experimental results
J. Enríquez-Zárate, J.C. García-Sánchez, R. Velázquez
Universidad Panamericana, campus Aguascalientes
- P3 | Accurate classification of bioclimatic data: temporal analysis
Giuseppe Passarella, Emanuele Barca, Delia Bruno, Sabino Maggi, Rita Masciale, Aimé Lay-Ekuakille
CNR-IRSA Water Research Institute
- P4 | Characterization of apple surface wax layer by active thermography
Rosario Morello, Claudio De Capua
University Mediterranea of Reggio Calabria
- P5 | Biomass and biochar potential, a chance for semi-desertic areas like Aguascalientes, Mexico
Pia Berger, Felix Flesch
Universidad Panamericana, campus Aguascalientes
- P6 | Sensing systems for environmental measurements: influence of wind on particulate matters and ozone distribution
A. Lay-Ekuakille, P. Kapita, D. Contini, S. Maggi, G. Passarella
University of Salento, Italy
- P7 | Multi-temporal analysis of areas under landslide: protecting soil against subsidence and pollution
L. Blois, C.A. Blois, M. Caponi, E. Blois, A. Lay-Ekuakille
University of Salento, Italy
- P8 | Advanced remote sensing method for landslide modeling and prediction
L. Blois, C.A. Blois, M. Caponi, A. Lay-Ekuakille, N.I. Giannoccaro
University of Salento, Italy
- P9 | High efficiency-based geothermal probe
L. Blois, C.A. Blois, M. Caponi, A. Lay-Ekuakille, R. Velázquez
University of Salento, Italy

Friday August 4th
Aula Aguascalientes

Session 3: Nanotechnology and health impact

Chair: Paolo Sommella

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| 12:00-12:30 | The Biochemical Effects of Biomagnetic Therapy on Type II Diabetic Rats and Potential use in Nanotechnology
<i>M. Williams, H. Asemota, C. Nwokocha, M. Voutchkov, D. McGrowder, E. Williams</i>
University of the West Indies, Jamaica |
| 12:30-13:00 | Non-destructive determination of 40K in Marijuana and the effective radiation dose to the body
<i>Johann Antoine, Charles Grant</i>
International Centre for Environmental and Nuclear Sciences, Jamaica |
| 13:00-13:30 | Glycemic Index: Nano-Considerations and Impact in Rat Model of Type 2 Diabetes
<i>Ryan D. Francis, Michael T. Gardner, Perceval S. Bahado-Singh, Ann-Marie Smith, Andrew O. Wheatley, Helen N. Asemota</i>
University of the West Indies, Jamaica |
| 13:30-14:00 | Cheap Diamond-Like-Carbon (DLC) Thin Films: Nanotechnology Transfer from Academia to Industry
<i>Elvira Williams</i>
Syntraguard, LLC |