

# Editorial

## Special issue of the *Ingeniería e Investigación* journal, devoted to the 6<sup>th</sup> International Symposium on Electric Power Quality – SICEL 2011

Nowadays electricity systems are moving rapidly towards smart grids for improving electric power efficiency, voltage regulation, reliability and quality. Latin America's electricity systems are not indifferent to such tendency; many efforts have been made during the last years, but many difficulties still remain unsolved. Electric power quality issues are directly related to all expected smart grid improvements; the necessary technical developments, the research and experimental experience orientated towards resolving existing problems are thus highly pertinent.

The 1<sup>st</sup> International Symposium on Electric Power Quality (SICEL) was held in Bogotá (Colombia) ten years ago, in October 2001. It created a space for academic and professional discussion regarding topics related to electric power quality and its implications in diverse sectors of society, consolidated internationally through the active participation of researchers and professionals from most of the 13 Latin-American countries and Spain during the last 10 years. SICEL thus responds to the needs of Latin-American electricity systems regarding electric power quality research and technical solutions, contributing today towards smart grids becoming implemented.

Four sessions of the SICEL followed, providing a collection of more than 250 technical papers regarding lightning protection, electric power quality analysis and simulation, solutions to electric power quality issues, non-sinusoidal condition issues, electric power quality measurement, electricity availability and reliability and economic aspects.

The fruitful experience of the last 5 symposiums resulted in general agreement amongst all participants that the symposiums should be continued. The sixth meeting of the SICEL was meant to promote technical and academic exchange between all countries from the region. The 6<sup>th</sup> International Symposium on Electric Power Quality (SICEL 2011) was therefore held from November 2<sup>nd</sup> – 4<sup>th</sup> 2011 in Asunción, Paraguay, a beautiful South-American city close to Itaipú, one of the largest power generating systems in the world. It was jointly hosted by the Universidad Nacional de Asunción and the Universidad Nacional de Colombia and was sponsored by Itaipu, Yacyreta, Ande, Inpaco, Chortitzer, Everest, UIP, Trafosur, Trafopar and Holdebac from Paraguay and Segelectrica and Cidet from Colombia. SICEL 2011 was also supported by the Vice-Presidency of Paraguay, the Paraguayan Vice-Ministry of Mines and Energy, the Paraguayan-German Chamber of Commerce and Industry, IEEE Paraguay, Fundaingue, Mundo de la Electricidad, Conacyt, Centro Paraguayo de Ingenieros and Boarding Pass.

The editorial board of *Ingeniería e Investigación* (I&I), chaired by Prof. Oscar Castellanos, encouraged the publication of papers presented at SICEL 2011, along with some of the most interesting discussion topics. The accepted papers focused on electric power quality problems and solutions, measurement, reliability, modelling and computational tools, grounding systems, modelling and simulation, distributed generation and electromagnetic compatibility.

I&I has compiled an extensive review of technical engineering contributions from Latin-American researchers and those from other regions during the last 30 years; the SICEL 2011 organising committee was thus pleased to accept Prof. Castellanos' invitation to select and publish the best conference papers. We feel that the collection of papers contained in this issue of I&I is an up-to-date survey of the most recent and advanced scientific achievements regarding electric power quality and related experimental investigation methods. It also provides significant convergence for the scientific work done in this field in the search for a common database regarding electric power-related phenomena and properties, as clearly shown by the discussion topics.

The SICEL 2011 organising committee would like to acknowledge all the researchers who have supported us in evaluating the technical papers submitted for consideration. The following formed part of the SICEL 2011 international scientific committee:

Carmen Vasquez (Venezuela), Hernán Emilio Tacca (Argentina), Victorio Oxilia (Paraguay), Juan Carlos Rolon Gadea (Paraguay), Claudio Saldaña (Uruguay), Farhad Rachidi (Switzerland), Volker Staudt (Germany), Blas Hermoso (Spain), Jan Meyer (Germany), Carlos Murillo (Mexico), Dan Ward (United States), Ernesto Pérez (Colombia), Javier Herrera (Colombia), Luis Eduardo Gallego (Colombia), Estrella Parra (Colombia), Gabriel Ordóñez (Colombia), Ferley Castro (Colombia), Mauricio Vargas Lezama (Colombia), Rosa Elvira Gutierrez (Colombia), Francisco Amortegui Gil (Colombia), Armando Jaime Ustariz (Colombia), Jose Samuel Ramirez (Colombia), Jorge Gutierrez Gómez

(Colombia), Luis Ernesto Luna (Colombia), Jhony Montaña (Colombia), Miguel Romero (Colombia), Oscar Duarte Velasco (Colombia), Sandra Carvajal Quintero (Colombia), Cesar Arango Lemoine (Colombia), Elsy Prado (Colombia), Neil Guerreo Gonzalez (Colombia), Nicolas Toro (Colombia), Johan Petit (Colombia), Guillermo Aponte (Colombia), Ubaldo Fernández (Colombia) and Andrés Delgadillo (Colombia).

Although many questions still remain unanswered, we hope that this issue of I&I devoted to the 6<sup>th</sup> International Symposium on Electric Power Quality, could be a significant step in advancing Latin-American knowledge regarding electric power systems.

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