IGIP'2011

40th IGIP International Symposium on Engineering Education

Santos, March 27 to 30 2011

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Summary

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1. IGIP’2011

IGIP’2011, XL IGIP International Symposium on Engineering Education was accomplished in Santos, State of São Paulo, Brazil, on March 27 to 30 of 2011, in UNISANTA – Santa Cecilia University, the largest Universities of the Atlantic Forest Region.

This Congress was organized in Brazil by COPEC – Science and Education Research Council, constituted of scientists of the education area and sciences, which believe in the research and in the development of the science and of the technology, as the great propellers of the development and of the progress for the welfare of humanity.

The objectives of the Congress are to establish and to maintain the exchange between educators and institutions of Engineering and Technology of several countries of the world; to improve the communication and the technology exchange among these countries and to encourage and to promote efforts in order to look for an international perspective for the institutions involved with Engineering and Technology.

2. Content

Occupying 7 rooms in Santa Cecilia University and one Amphitheater in Campus Boqueirao of Santos City the event propitiated to participants 2 workshops, 12 lectures guests and 35 technical sessions for the presentation of 256 works selected by the technical committee of the Congress.

It accompanies this document a copy of the Book of Abstract of IGIP’2011 that consists of complete program of Congress with the abstracts of all presentations and a copy of Proceedings in CD of the Congress. 346 works have been peer-reviewed and 256 were accepted for presentation and for publication in the proceedings.

2.1 Workshops

On Sunday, March 24 of 2011, 2 workshops were accomplished (one per period), as detailed below.

WORKSHOP I (8:30 am – Noon)
Enhancing undergraduate Mechanical engineering teaching by using simulation software
Prof. Dr. Arnaldo Mazzei – Kettering University, Flint, MI, USA
WORKSHOP II (1:30 pm – 5:00 pm)
Inverted Curriculum Approach: Curricular Development in Engineering and Informatics Courses
Prof. Dr. Clara Amelia de Oliveira – Federal University of Santa Catarina, Florianópolis, SC, Brazil

2.2 Keynote Lectures

The invited lectures were the sessions more sought by the participants, provoking long debates during the session of questions that followed each presentation. They were:

1- **Forming International Engineers for the Information Society**: Prof. Dr. Claudio da Rocha Brito – President of COPEC;

2- **IGIP’2011 - XL IGIP International Symposium on Engineering Education.**
   Prof. Dr. Melany M. Ciampi – President of OPASS and Vice President of IGIP;

3- **IGIP – International Society for Engineering Education.** Prof. Dr. Michael Auer – President of IGIP;

4- **ING-PAED IGIP – International Engineering Educator.** Prof. Dr. Dana Dobrovská – President of IMC – International Monitoring Committee;

5- **World Tendencies of Higher Education Development and Foreign Language Training in Russian Engineering Education.**
   Prof. Dr. Tatiana Polyakova – Head of the Foreign Languages Department, Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

6- **Education standards and competence-oriented curricula – the Austrian Technical Colleges pursue a new way into the future!**
   Prof. Dr. Axel Zafoschnig – Chief Inspector of VET Colleges in Carinthia, Klagenfurt, Austria and Prof. Dr. Wolfgang Pachatz, Federal Ministry for Education, Arts and Culture, Vienna, Austria;

7- **Complex Approach to Technical Teacher Education in Engineering Pedagogy.** Prof. Dr. Tiia Rüütmann – Head of Estonian Centre for Engineering Pedagogy, Tallinn University of Technology, Tallinn, Estonia;

8- **Engineering and Technology Education in Portugal**: Prof. Dr. Luis Amaral – President of Computer Graphics Center, Portugal;

9- **The Value of Hands-On Activity in Teaching Sciences and Technology: from Traditional Labs to the Remote and Virtual Laboratories**: Prof. Dr. Teresa Restivo – President of Portuguese Society for Engineering Education, Portugal;

10- **Specialization Courses: New University Target**: Prof. Rosa Maria Vasconcelos – President of Pedagogic Council of University of Minho, Portugal;

11- **Geotechnical Engineering Education at UPorto**: Prof. Dr. José Couto Marques – Director of the Lifelong Learning Programme, University of Porto, Portugal;
12- Undergraduate Service-Learning Engineering Design Projects In Ecuador: Prof. Dr. Dan Budny – University of Pittsburgh, Pittsburgh, PA, USA;

13- The Inclusive Classroom: A Research-Based Approach to Enhance Learning: Prof. Dr. Teresa L. Larkin – American University, Washington, DC, USA.

The invited lectures happened at the Amphitheater of Santa Cecilia University.

2.3 Presentation of Papers

The presentations of the 256 technical papers happened simultaneously at 7 rooms of Santa Cecilia University Campus. The participants had the opportunity to present their works and they could discuss their investigations with other scientists.

The complete program with the abstract of each paper accompanies this documentation.

3. Participants

IGIP’2011 has counted with the registration of 415 people but this number is not the real number of participation because: There are several people from East Countries who were in the conference but did not pay the registration and did not present their papers because did not do the registration but were in the conference. By the other hand several Brazilian people did not participate because the registration was made after the conference. So in fact we have more or less 250 professionals of engineering and technology education, coming from many parts of the world in the conference.

Among the participants, we registered the specialists from Argentina, Austria, Belgium, Bulgaria, Canada, Chile, Colombia, Czech Republic, Denmark, England, Estonia, Finland, France, Germany, Greece, Holland, Hungary, Italy, Kazakhstan, Mexico, Norway, Poland, Portugal, Romania, Russia Federation, Slovak Republic, Spain, Sweden, Switzerland, Turkey, Uruguay and USA.

4. Evaluation

With the purpose of a more precise evaluation and with the objective of improving the activities, the organizers of IGIP’2011 requested the participants the kindness to fill out a brief evaluation form.

Based on the participants evaluation forms filled out we made the synthesis whose comments are summarized in the figure below.
5. Conclusion

IGIP’2011 fully accomplished the objectives overcoming the expectations.

The promoters of the event were showing satisfaction with the results and they stated their satisfaction to the organizers.

<table>
<thead>
<tr>
<th>About the Organization</th>
<th>1 to 10-medium</th>
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<tbody>
<tr>
<td>Were their requests assisted satisfactorily by the reception?</td>
<td>9,2</td>
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<tr>
<td>Evaluation on the place of the Congress</td>
<td>9,7</td>
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<tr>
<td>Evaluation on the time given for each session</td>
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<td>Evaluation on the total time of the Congress</td>
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<tr>
<td>His/her general evaluation of the Congress</td>
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<tr>
<td>On IGIP’2011</td>
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<tr>
<td>Quality of the Technical Goods</td>
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<td>Quality of Proceedings</td>
<td>9,9</td>
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<tr>
<td>How did you get acknowledge about IGIP’2011</td>
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<tr>
<td>Home-page (3%)</td>
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<tr>
<td>E-mail (53%)</td>
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<td>Personal communication (43%)</td>
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<td>Others (1%)</td>
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</table>

IGIP’2011 was praised by the participants, so much for the technical content as for its organization.

The good organization was thanks to the collaboration of invited speakers, instructors of workshops, authors of papers in this Congress as well as to all the participants that gave prestige to this Congress and without which the event could not be the success that it was.

Special thanks to the priceless collaboration of the technical cooperator, IEEE-ED. SOC, whose endorsement made possible the accomplishment of this International Conference in Santos, Brazil.
ANNEX 1
Committees

General Chair:
Claudio da Rocha Brito

Technical Program Chair:
Melany M. Ciampi

IGIP President:
Michael E. Auer

IGIP Honorary Life President:
Adolf Melezinek

IGIP Vice-Presidents:
Melany Ciampi
Pavel Andres
Viacheslav Prikhodko

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Traugott Schelker, (co-coordinator) Switzerland
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Georg Spöttl, Germany
Gudrun Kammasch, Germany
Hans-Bernhard Woyand, Germany
Joachim Hoefele, Switzerland
Martin Bilek, Czech Republic
Melany M. Ciampi, Brazil
Ralph Dreher, Germany
Sorin Zaharia, Romania
Stefan Stankowski, Switzerland
Tatiana Polyakova, Russia

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Melany Ciampi, Brazil
Pavel Andres, Czech Republic
Roman Hrmo, Slovakia
Tatiana Polyakova, Russia
Teresa Restivo, Portugal
Tiia Rüütmann, Estonia
Viacheslav Prikhodko, Russia

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Adolf Melezínek, Austria
Claudio da Rocha Brito, Brazil
Galimkair Mutanov, Kazakhstan
Jos H.J. Stakenborg, Netherlands
Wassiliy Zhurakowskij, Russia

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Denis Willemin, President of RCI
Khalil S. Taraman, President of SME Education Foundation
Krishna Vedula, President of IFEES
Muthar Al-Ubaidi, President of INTERTECH
Renata S. Engel, President of ASEE
Rob Reilly, President of IEEE Education Society

Technical Program Committee:
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Alexandre Botari, Brazil
Ana Júlia Ferreira Rocha, Brazil
André Reda, Brazil
Anita Westerström, Sweden
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