

Report on
ISOT 2010
International Symposium on Optomechatronic Technologies
25-27 October 2010, Toronto, Canada

Technically Co-sponsored by:

IEEE Industrial Electronics Society
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Ryerson University
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EXECUTIVE SUMMARY:

“The symposium was a great success.” This was what the steering committee and attendees concluded. We received many congratulation and appreciation messages from the attendees. We undoubtedly owe the success of ISOT 2010 in part to the sponsorship of IEEE and OSA organizations and the extensive promotional efforts of ISOT 2010 executives. In addition to web site postings, emails, paper distributions of the CFP, we published the CFP in the digital newsletter of IEEE-Canada and IEEE Robotics and Automation Magazine. Also this year, for the first time, we ran two successful tutorials. Out of 96 papers submitted to the technical program committee, 85 were accepted for presentation in the symposium. The final number of attendees was 102. About 35% (35 people) of the participants were students. We also featured 3 plenary speakers in the beginning of the each day, all well-known world-class researchers.

DETAILS OF THE SCIENTIFIC PROGRAM:

The ISOT 2010 was run with the Technical Program encompassing:

- Plenary Lectures – 3 plenaries
- Total Sessions - 15 sessions
 - Regular Paper Sessions – 12 sessions
 - Special Invited Sessions – 3 sessions
- Tutorials - 2 sessions.

Plenary and Invited Talks:

There were 3 plenary talks in the program as follows:

- *Optomechatronics on the Nanoscale*, presented by Professor Olav Solgaard, Director of the E.L. Ginzton Laboratory, Department of Electrical Engineering, Stanford University, USA.

- *Subspace Based Methods for Phase Estimation in Interferometry*, presented by Professor Pramod Rastogi, Applied Computing and Mechanics Laboratory, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland.
- *Shearography and Applications in Measurement and Nondestructive Evaluation*, Professor Michael Y.Y. Hung, John F Doge Professor Emeritus, Oakland University, Rochester, Michigan, USA.

Regular Sessions:

Regular papers of the symposium were grouped into 12 sessions (some of which scheduled into multiple time sessions but sharing the same title for coherence) with 65 papers. Each paper was allocated a total of 15 minutes in the program (10 minutes for presentation and 5 minutes for the questions and discussions).

- Session BO: Biomedical optics (5 papers)
- Session LPTI: Laser processing techniques and instrumentation (5 papers)
- Session OI: Optical imaging (9 papers)
- Session OSD: Optomechatronic system design (6 papers)
- Session MVI: Machine vision and inspection (4 papers)
- Session PS: Photonic Sensors (5 papers)
- Session 3DSI: 3D sensing and imaging (5 papers)
- Session IAPR: Image analysis and pattern recognition (4 papers)
- Session VTSC: Vision-based tracking, servoing, control (6 papers)
- Session A: Actuators (5 papers)
- Session MN: Micro/nano devices and systems (8 papers)
- Session FOD: Fiber optic devices (3 papers)

Invited/Special Sessions:

The program contained the following Special Sessions with 20 papers:

- Session SP-SH: Optical systems for shape and deformation measurement (9 papers)
- Session SP-LI: Laser interferometry, phase retrieval (6 papers)
- Session SP-MNM: Micro/nano manipulation (5 papers)

Tutorials:

There were two tutorials given by 3 experts as follows.

- *Tutorial A: Sensor Data Fusion, Principles and Applications*, by Professor Behzad Moshiri, University of Tehran, Iran.
- *Tutorial B: Introduction to Optical Metrology*, by Professor Vincent Chan and Dr. Howard Yuanhao Huang, Ryerson University, Canada.

Countries of Origin:

Papers were counted based on the country of the 1st author that resulted in 13 countries as follows:

Order	Country	Papers
1	Canada	21
2	Japan	18
3	Iran	12
4	South Korea	11
5	United States	7
6	Germany	5
7	China	4

8	France	2
9	Chile	1
10	Ireland	1
11	Singapore	1
12	Slovenia	1
13	Taiwan	1
	Total	85

The attendees were from 16 countries as follows:

Country	Attendees
Canada	33
Japan	21
Korea	14
USA	9
Iran	7
China	4
Germany	3
France	2
Hong Kong	2
Chile	1
India	1
Ireland	1
Singapore	1
Switzerland	1
Slovenia	1
Taiwan	1
Total	102

Proceedings:

The proceedings of the conference were published at the time of the conference and given to attendees. A copy was also sent to IEEE for digital indexing.

Laboratory Tours:

There were technical tours of the following laboratories:

- 1) Robotics, Mechatronics, and Manufacturing Automation Laboratory (Director Prof. Farrokh Sharifi), Ryerson University, Toronto;
- 2) Biophotonics and Bioengineering Laboratory (Director Prof. Victor Yang) Ryerson University, Toronto;

both on October 25, 12:00-2:00 pm. A luncheon was also organized by VP-Research Office of Ryerson University.

- 3) Emerging Communications Technology Institute (ECTI), Nanofabrication and Clean Room Facilities, at the University of Toronto, on Wednesday October 25.

DETAILS OF THE SOCIAL PROGRAM:

Conference Venue:

The technical program of ISOT 2010 took place at the Metro Toronto Convention Centre.

The social program included: a reception on the first evening at the convention centre, a Conference Banquet – Awards Ceremony on the second evening on a cruise boat in the Toronto Harbour, and a dinner and tour at the CN Tower, on the third evening. There was a Tour of Niagara Falls the day after the conference,

The technical program of ISOT 2010 took place in Metro Toronto Convention Center (MTCC), Toronto, which is in the heart of the business district of Toronto. A total of 6 hotels, many in walking distance to MTCC, were negotiated to offer a range of prices and choices for the attendees. Substantial discounted rates were also secured from each hotel. The majority of the participants of the conference stayed in the hotels nearby.

The conference included extraordinary programs in the registration package, even for the students. This was to maximize interactions among the participants.

Welcome Reception:

A welcoming event was organized that included assorted hot and cold hors-d'oeuvres and beverages on the evening of Monday October 25th at the conference venue. The registration package, even for the students, included tickets to the Welcome Reception.

Conference Banquette:

The conference banquet dinner was held on the evening of Tuesday, October 26th, as a cruising dinner on the Ontario Lake (Harbour front). The banquet programs included awards presentations and message of the Conference Chair, and live music. In addition to regular registrants, student registrants had free admission to the conference banquet.

Coffee Breaks:

The registration package contained tickets for light snacks and hot/cold beverages during the breaks. Two coffee breaks were considered per day of the conference.

Tours of Ryerson University and the University of Toronto:

Tours of related labs were organized in two days (October 25, 12:00-2:00 pm for Ryerson University and Wednesday October 27, 12:00-2:00 pm for the University of Toronto). A luncheon was also organized by VP-Research Office of Ryerson University. Buses were rented to provide free transportation between MTCC and the aforementioned universities to the visitors.

City and Post Conference Tours:

Two options were included in the full-registration package.

The first tour included multi-day tour of the city in a flexible manner. The city tour ticket was for a Hop-on Hop-off style of tour on double-decker buses, with 24 stops valid during the 3 days of the conference (multi-day pass throughout the conference period). It also included a free boat tour of the Toronto Inner Harbour. This tour also included CN Tower tour and the dinner in a 360 degree rotating restaurant with the view of the city on Wednesday October 27th.

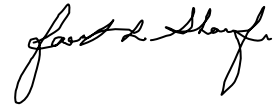
The second option was the full-day tour of Niagara Falls on October 28th. In addition to the falls, a tour of historic city of Niagara-on-the-Lake and a lunch served at Sheraton Hotel (of Niagara) were included.

Finally a free boat tour of the Inner Harbour with snacks in the afternoon of October 29th was offered to the attendees.

A number of participants and their spouses took part in many of these activities especially the city tours.

Acknowledgments

I would like to thank ISOT 2010 Organizing Committee and particularly two key figures of the event, Dr. Koffman and Dr. Rahnamayan in helping me before, during and after the event. Our success is owed to the dedicated efforts of many people including colleagues, volunteers, students, and others alike. Special tanks also go to the Steering Committee for their support and guidance. I am grateful for the support of OSA and IEEE Industrial Electronics Society for their technical co-sponsorships extended to the conference.



Prof. Dr. Farrokh Janabi-Sharifi
General Chair
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