

Welcome to Toronto, Canada!



**TORONTO'2014 AES – ATEMA 25th International Conference
(Toronto, CANADA: August 10 - 14, 2015)**

“Advances and Trends in Engineering Materials and their Applications”

ISBN 978-1-927838-15-0 (CD-ROM) & 978-1-927838-14-3 (Hard Copy)

<https://toronto2015aesatema.wordpress.com/>

Conference Host & Chair:

Prof. Dr. Yehia Haddad, P. Eng.

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A Cordial Welcome ...

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On behalf of the International Editorial Board of AES Technical Reviews International Journal Series, the International and Local Organizing Committees of AES-ATEMA International Conference Series, I wish to cordially welcome all delegates to this very important international conference which, following the tracks of its preceding international AES-ATEMA International Conferences, will continue to address the advances and trends in engineering materials and their applications. I wish all delegates a very fruitful meeting and, together with their families, a very enjoyable stay in Toronto, Canada. With our sincere thanks and appreciation to all delegates for their valuable contributions to the Conference.

Host and Chair:

Prof. Dr. Yehia Haddad, P. Eng.

Chair: AES-ATEMA International Conference Series

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Conference Venue



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The magnificent “Fairmont Royal York Hotel” of Toronto has been selected as the venue for the TORONTO'2015 AES-ATEMA 25th International Conference (August 10 – 14, 2015):

The Fairmont Royal York Hotel,
100 Front Street West, Toronto, Ontario M5J 1E3, Tel. (416)860 -4547, Fax: (416)368-9441.

As has been announced on the pertinent Conference-website, the Fairmont Royal Hotel welcomes the delegates of the Toronto'2015 AES-ATEMA 25th International Conference with a guest-room selection at a reduced room-rate. You are kindly advised to reserve your Fairmont guest-room as soon as possible. You may wish to do so by using the following direct link to the Hotel:

The Fairmont Royal York Hotel
100 Front Street West
Toronto
Ontario, Canada
M5J 1E3
[**Maps & Directions**](#)

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TEL + 416 368 2511
FAX + 416 368 9040

[**International Numbers**](#)

Located in the heart of Toronto, The Fairmont Royal York has everything you need for a memorable stay – opulent surroundings, a knowledgeable Concierge team, fine dining, state-of-the-art exercise facilities, including a very charming indoor swimming pool, plus so much more.

The hotel is right in the heart of it all, steps away from the best nightlife, dining, shopping and other attractions. The hotel is conveniently located across from the train “**Union Station**” at 100 Front Street West within the financial and entertainment districts.

The hotel is connected by the underground PATH Walkway to approximately 1,200 shops, services and attractions, including:

- Ripley's Aquarium of Canada, The Fairmont Royal York's official partner
- Hockey Hall of Fame
- Air Canada Centre
- Eaton Centre
- Union Station

[**Arriving at the Conference-hotel from Toronto' Airport**](#)

The International Airport serving the great metropolitan of Toronto is Toronto Pearson International Airport <http://www.torontopearson.com/>

For arriving at the Conference Hotel “The Fairmont Royal York Hotel” from Toronto Pearson International Airport, we advise our Conference-delegates to take the “Airport Bus” which leaves frequently, and at a regular schedule, from the Airport and bring you right at the doors of the Hotel. The bus trip takes about 40 minutes and the fare is judged by us to be very reasonable. It is very good service and we are sure that you will enjoy the trip (Bonne Voyage!).



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Welcome to our AES-ATEMA International Conference Series – 2015



(Welcome all nations!)

- 1) MONTREAL'2015 AES-ATEMA International Conference (Montreal, CANADA: June 15 - 19, 2014) - **SUCCESSFULLY COMPLETED!**
- 2) TORONTO'2015 AES-ATEMA International Conference (Toronto, CANADA: August 10-14, 2015)
<https://toronto2015aesatema.wordpress.com/>
- 3) VENICE (ITALY)'2015 AES-ATEMA International Conference (Venice, ITALY: September 15-19, 2015)
<https://venice2015aesatema.wordpress.com/>
- 4) Ottawa'2014 AES-ATEMA Int. Conference (Ottawa, CANADA: October 12 - 16, 2015)
<https://astaa2015.wordpress.com/>



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Conference Proceedings
ISBN 978-1-927838-15-0 (CD-ROM) & 978-1-927838-14-3 (Hard Copy)

Proceedings of TORONTO'2015 AES-ATEMA 25th International Conference on “Advances and Trends in Engineering Materials and their Applications (Toronto, CANADA: August 10 - 14, 2015)”.

A record of the book, of Conference Proceedings, is available at:

“Library and Archives Canada”

under the following publication codes:

ISBN 978-1-927838-15-0 (CD-ROM) & 978-1-927838-14-3 (Hard Copy)

For all information pertinent to the Conference proceedings, please contact the editor:

Conference chair & host:

Professor Dr. Y. M. Haddad, P. Eng.

University of Ottawa, Ottawa, Canada

Email: yhaddad@uottawa.ca; aesatema@gmail.com

ELSEVIER

AES-ATEMA Conference Proceedings will be indexed by Elsevier Amsterdam:

The AES-ATEMA International Conferences on Advances and Trends in Engineering Materials and their Applications have been selected by Elsevier (The Netherlands) for indexing and extracting data. **The coverage includes Scopus and Compindex (EI) and their collections, such as SciVal funding, SciVal Spotlight, Scival Strata, Scival Expert, Illumin8 and SCOPUS Data Bases.** All back, present, and future issues of AES ATEMA Proceedings and their Derivatives have been / will be submitted to Elsevier for Indexing and inclusion in the SCOPUS.



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CONFERENCE PROGRAM

MONDAY: AUGUST 10, 2015

Arrival in Toronto.

TUESDAY: AUGUST 11, 2015
(New Brunswick Meeting Room)

08:30 – 09:00

Registration

09:00 – 09:30

Welcome to "Toronto'2015 AES-ATEMA 25th International Conference".
Y. M. Haddad (CANADA)

Session I(A): Metallic Glass
Chair: Y. M. Haddad (CANADA)

09:30 – 10:30

[KEYNOTE LECTURE]

On the Deformation, Friction and Wear of Bulk Metallic Glass.

Liangchi Zhang

The University of New South Wales, Sydney, **AUSTRALIA.**

10:30 – 11:00

AM Break

Session II: Composite Materials and Structures

Chair: Liangchi Zhang

The University of New South Wales, Sydney, **AUSTRALIA.**

11:00 – 11:30

Effects of Orientation State of Short Natural Fiber on Mechanical Properties in Polypropylene-Bamboo Based Composite by Experimental and Computational Methods.

Jorge I. Fajardo *, Jonnathan D. Santos and Luis Garzón

Universidad Politécnica Salesiana, Cuenca, **EQUADOR.**

11:30 – 12:00

Improving the Processing and Rheological Properties of Natural Fibre/ Polypropylene Composites.

Jorge I. Fajardo*, Diego R. Lasso, César A. Paltán, Luis M. López, Diego Perguachi and Luis J. Cruz.

Universidad Politécnica Salesiana, Cuenca, **EQUADOR.**

12:00 – 14:00

Lunch

**Session II (Continued): Composite Materials and
Structures Chair: Jorge I. Fajardo**
Universidad Politécnica Salesiana, Cuenca, EQUADOR.

14:00 – 14:30

Mixed Framework-Shell Design Approach for Highly Loaded Fibre Reinforced Thermoplastic Structures.

Jakob Faber*and Helmut Schürmann

Institute for Lightweight Design and Structures, TU Darmstadt, GERMANY.

Session III: Nano Systems

Chair: Jakob Faber

TU Darmstadt, GERMANY.

14:30 – 15:00

Zirconia Nanoparticle Reinforced Al-Si-Cu Alloy Based Composite for Low Temperature Brazing Applications

Myung-Hwan Roh, Ashutosh Sharma, Dong-Uk Lim, Jae-Pil Jung*

University of Seoul, Seoul, SOUTH KOREA.

15:00 – 15:30

PM Break

Session IV: Composites and their Derivatives

Chair: Jae-Pil Jung

University of Seoul, Seoul, SOUTH KOREA.

15:30 – 16:00

Effect of Wool, Acrylic and Nylon Textiles on the Electrostatic Charges and Friction Coefficients.

Saeed A. Al-Ghamdi, H. M. Abo-Dief and Ashraf T. Mohamed.

Al-Baha Faculty of Engineering, Al-Baha, KSA and Al-Taif University, SAUDI ARABIA.

16:00 - 16:30

Determination of Setting-time and Investigation of Mechanical Properties of High-strength Concrete from Green Hybrid-cement.

Badr Al-Sulami.

Taif University, SAUDI ARABIA.

16:30 - 17:00

Designing Green Engineered Cementitious Composites (G-ECC) Using Recycled Cement-like Materials and Natural Date Palm Micro-fiber.

Badr Al-Sulami.

Taif University, SAUDI ARABIA.

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Wednesday: AUGUST 12, 2015
(New Brunswick Meeting Room)

08:30 – 09:30

Session I(B): Advances in Structural Engineering
Chair: Yehia Haddad (CANADA)

{KEYNOTE PAPER}

Compressive Capacity Perpendicular to Grain of Fully Supported Timber Beams of Poplar – Model Comparison.

A. J. M. Leijten

University of Technology, Eindhoven, **NETHERLANDS.**

09:30 - 10:00

Development of an Optimum Hybrid Process for Date Palm Waste as a Source of Cementing Materials.

Badr Al-Sulami

Taif University, **SAUDI ARABIA.**

10:30 – 11:00

AM Break

Session V: Micromechanics

Chair: A. J. M. Leijten

University of Technology, Eindhoven, **NETHERLANDS.**

11:00 – 11:30

Towards Determining Non-destructively the Ultimate Strength of the Material in Quantitative Manner.

Y. M. Haddad

University of Ottawa & Advanced Engineering Solutions [AES.COM], Ottawa, **CANADA.**

11:30 – 12:00

On the Optimization of a Class of Adaptive Composite Systems: A Deterministic Micromechanical Approach

Y. M. Haddad* and J. Feng

University of Ottawa & Advanced Engineering Solutions [AES.COM], Ottawa, **CANADA.**

12:00 – 14:00

Lunch

14:00 – 14:30

Session VI: Corrosion of Metallic Systems

Chair: Saeed A. Al-Ghamdi

Al-Baha Faculty of Engineering, Al-Baha, **KSA** and Al-Taif University, **KSA**

Cold Sprayed Copper Coatings on Brass: Corrosion Studies in Simulated Marine and Industrial environment.

Goyal. Tarun, T. S. Sidhu* and R. S. Walia

SUS College of Engineering and Technology, Tangori, Mohali, SBSSTC, Ferozepur and Delhi Technological University, Delhi, **INDIA.**

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14:30 – 15:00

Quality Assessment of Paving Materials and Highway Projects for Pay Adjustment Factor Method,

Badr Al-Sulami

Taif University, **SAUDI ARABIA.**

15:00 - 15:30

Session VII: Bioinformatics

Chair: Y. M. Hdddad (CANADA)

Narayanappa Munivenkatappa

Evaluation of polyphenylene ether ether sulfone / nanohydroxyapatite nanofiber composite as a biomaterial for hard tissue replacement.

Bioinformatics Media & Research Centre, Chennai, INDIA.

THURSDAY: AUGUST 13, 2015

Conference program will be announced.

FRIDAY: AUGUST 14, 2015

Discover Toronto and surroundings, on
your own or with fellow delegates.