

SOfE 2019 Vancouver heat organized by Chartered Engineers Pacific on May 25, 2019 at UBC, Vancouver

Chartered Engineers Pacific (CEP), Vancouver has organized IMechE's maiden Speak Out for Engineering (SOfE) Competition on May 25, 2019 at the University of British Columbia, Vancouver, Canada. Speak Out for Engineering is a competition designed to help develop verbal and visual communication in explaining technical mechanical engineering related subjects. It is open to any Affiliate, Associate or Young Member of IMechE who has been professionally registered for ten years or less.

Altogether six candidates had registered for the SOfE 2019 Vancouver heat. However, only four candidates participated in the competition. Apart from the panel of three judges, three CEP Committee members and some guests had also attended the competition.



Dr. Suresh Vishwakarma describing IMechE and SOfE



Jessica Bo giving her presentation

The competition began with a brief introduction of The Institution of Mechanical Engineers (IMechE), Chartered Engineers Pacific (CEP), and SOfE competition by Dr. Suresh Vishwakarma, Chairman of Chartered Engineers Pacific. He had chaired the SOfE competition and encouraged the participants to become IMechE members. That was followed by presentations by the engineering students based in Vancouver. It was a prerequisite that the participating competitors must be either an Affiliate or Associate member or a member of IMechE who have been professionally registered for 10 years or less. The presentation must be made by an individual, regardless of whether the subject was part of a group 'technical' project. A winning entry in any year was not eligible for entry in subsequent years.

Competitors were expected to give a presentation on a mechanical engineering subject within maximum twenty minutes followed by questions from judges and audience for ten minutes. The presentation skills were allocated 90% weightage while only 10% weightage for technical content. This ensured that, while all presentations must have mechanical engineering content in its broadest sense (e.g. purpose, research, design, feasibility, and practicality), all presentations have the same chance of success despite varying degrees of technical content.

The presentation skills were judged based on structure and content of presentation, effective use of presentation material, quality of presentation material, quality of preparation and handling of the questions and presentation style. All four presentations were very impressive and brilliantly delivered to the 'three judges' panel.



Saurabh Vishwakarma giving his presentation



Saad Latif giving his presentation

The Judges at maiden 2019 SOfE Vancouver heat were:

1. Dr. Sudhakar Cherukupalli, P.Eng., PhD
Principal Engineer,
Transmission Cables Design,
BC Hydro
2. Kris Gadareh CEng FIMechE
Bio-mechanical Engineering
Consultant
3. Jovan Kovacevic, P.Eng.
Vice President (Engineering)
ZE Power Engineering,
Richmond BC.

The presented topics were:

1. Sensory Substitution in Upper Limb Prosthetics, by Jessica Bo
2. Space Shuttle Challenger Disaster, by Saurabh Vishwakarma
3. The Future of Soccer Playing Robots, by Jordan Lei
4. Motor-Generator Speed & Torque Measurement Upgrade, by Saad Latif

After due deliberation, the three judges, who are all chartered / Professional Engineers of various disciplines, agreed upon a winner and runner-up. Prior to announcing the results of the competition, Kris Gadareh (Past Chair of CEP) appreciated all presenters for their quality presentations and motivated them to participate in future SOfE competitions also. Winner of this maiden SOfE Vancouver heat was Jessica Bo, and runner-up was Saad Latif.

Jessica described an upper limb prosthesis that can provide tactile sensation to an above elbow amputee. This is achieved by means of pressure sensors on the fingertips of the glove component and vibrotactile arrays attached to the user's stump for sensory feedback. The prosthetic, named H4ptic, can also be adapted to the user's existing prosthesis, making it practical for upper limb amputees to integrate the device into their daily lives.



Jordan Li giving his presentation



Judges asking questions to a presenter

Saad presented an economic, reliable and accurate solution to measure speed & torque for motors or generators. For the speed measurement, an encoder and an optical probe were used based on the "Hall Effect". Torque measurements were carried out using a strain gauge type sensor. The measurements taken by the new design closely matched the measurements using the existing handheld devices.



Group photograph of all SOfE presenters, judges, and event chair

CEP congratulates all the presenters and wish this year's winner Jessica Bo further success. Jessica advances to the next level of competition: SOfE Regional final of Americas. Special thanks go to Prafulla, Shailja, and Shefali for their volunteer work. Shefali assisted all presenters in screening their power point presentation. Appreciations go to all CEP committee members for their support and efforts to organize IMechE's maiden SOfE event in Vancouver this year.