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**SPIE Singapore Student Chapter
Annual Report**

**Prepared by,
Ravi Kumar K
President
SPIE Singapore Student Chapter**

The following are the office bearers for the year 2009

President: Ravi Kumar K

president@spiesingapore.org/ravi0011@ntu.edu.sg

Vice President & Web Admin: Kapil Dev

vicepresident@spiesingapore.org/kapi0001@ntu.edu.sg

Treasurer: Yan Hao

treasurer@spiesingapore.org/ya0001ao@ntu.edu.sg

Secretary: Ng Chi Seng

secretary@spiesingapore.org/ng0069ng@ntu.edu.sg

Joint Secretary: Huang Lei

jointsecretary@spiesingapore.org/m080010@ntu.edu.sg

Currently our chapter has 23 members and counting:

1. Mohammed Ajiya
2. Ali Reza Akbarzadeh
3. Jiahui Cong
4. Kapil Dev
5. JuanJuan Hu
6. Lei Huang
7. Mo Chao Huang
8. Ravi Kannadorai
9. Vineet Kuruvilla
10. Huy Quoc Lam
11. Shalin Mehta
12. Weirong Mo
13. Chi Seng Ng
14. Patinharekandy Prabhathan
15. Annie Shrestha

16. Ke Si
17. Vijay Raj Singh
18. Shinoj Vengalathunadakal
19. Yuanjun Yan
20. Yifan Zhang
21. Junqiang Zhou
22. Yan Hao
23. Huang Lei

Yan Hao and Huang Lei are members of SPIE Student Chapter but their names are not in the Singapore chapter list.

To attract more new members we provide 50% discount on the membership fee once they become a member. Many students do not bother about the renewal of membership once it is expired, to prevent that we fix a specific time duration during which if they renew the membership we provide them with 50% of the membership renewal fee.

Activities

Continuing with the good year of activities in 2008 our chapter put in all efforts to make this year better than 2008. But the economic recession did not spare our annual workshop ACOE to go on smoothly because the industries were the key factor in our workshop who failed to show any interest in participating. Hence we had to skip last year's workshop and we want to transform that workshop into a more training oriented workshop for our fellow members this year.



Annual General Meeting (AGM)

We started of this year with our Annual General Meeting (AGM) on March 11 2009 at Nanyang Technological University. Around 10 members attended the AGM during which the following points were discussed.

1. New members were welcomed and 50% of their discounted membership was given as promised to the new members. We explained them the role of SPIE in building our career towards a successful researcher.
2. Past activities were discussed and a foundation for future activities was laid. How to improve and make the activities more interesting than the past activities were discussed.
3. The new committee was elected in which Ravi Kumar Kannadorai was retained as the president for this year as well.

Digital Holographic Microscopy for Bio-imaging Applications

By Dr Vijay Raj Singh

Followed by AGM we organized a seminar by our very own student chapter member who completed his PhD around a year back. He also played a very crucial role in establishing our chapter in 2005. Dr. Vijay gave a talk on “Digital Holographic Microscopy for Bio-imaging Applications”. The talk mainly focused on the technology and advantages of Digital Holographic Imaging over conventional microscopy currently used for Bio-Imaging. Snacks and hot beverages were served for the audience.

Know your Fellow Chapter Member

To establish a better communication and understanding our fellow chapter members we organized an informal dinner on April 3rd 2009. Around 20 members participated in the dinner and a couple of ex-student members were invited to tell us how the chapter was when they were running the chapter.

Since there were members from different nationalities we had vote on what kind of cuisine the dinner would be. Ultimately the winner was Indian cuisine. The place was River Walk Tandoor (Dirk would be familiar with this restaurant).

Insight into Surface Enhanced Raman Scattering (SERS) and its some applications beyond the limit of fluorescence

By Dr. Dinish U S

On May 28 we organized a seminar on “Insight into Surface Enhanced Raman Scattering (SERS) and its some applications beyond the limit of fluorescence” which was presented by Dr. Dinish. Dr. Dinish was a member of SPIE Singapore student chapter during his

PhD and currently was a Research Fellow at Bio-Optical Imaging Group (BOIG) of Singapore Bioimaging consortium (SBIC), A-STAR, Singapore.

His talk was mainly related to bio-photonics and the use of SERS in bio-applications.

During the presentation he presented the main bio-photonics research activities at BOIG, SBIC which included.

- (i) The Development and application of various types of reproducible SERS substrates for sensing
- (ii) Development of highly-sensitive biocompatible SERS nanotags (SERS dots) for in-vivo imaging of human head and neck cancers in a murine xenograft model
- (iii) Development of novel fiber/specialty fiber based SERS imaging platform for metabolite and protein sensing-in vivo and in vitro

Holographic Display

By Prof. Yu Yingjie

Shanghai University, China

On 14 August, Prof Yu Yingjie from Shanghai University gave us a talk on Holographic Display. This seminar was co-organized with Optics and Photonics Society of Singapore (OPSS). A brief summary on the main techniques of 3D display was presented. The talk focussed on introducing the holographic display project done at Shanghai University, including an outline of this display project, key techniques, project experiments and considerations of future work. Some of the key techniques that were discussed included the cancellation of the zero-order and conjugate image, speckle noise in the opt-electronic holographic display, improvement of the display efficiency, correction of the nonlinear error of the phase modulation curve and also image interaction technique. Finally a brief introduction of the work on true-color holographic display was presented.

Future Activities

SPIE Asia'08 was the first big collaborative event organized by any student chapter in Asia as far as our knowledge is concerned. We tasted success in organizing it and we received plenty of good feedback about the event. This has motivated us to organize a student conference SPIE Asia'10 in the mid of next year. We want to involve more participation of student chapters across Asia with an estimated attendance of 50 or more. Student paper presentations, workshops, talks by eminent Professors etc would be the highlight of this 3 day event. The possible funding options and involvement of Industries are still being explored.

“An introduction to Zemax”, a one day workshop for the benefit of students will be organized at the end of September. Wavelabs, who are the local distributors of Zemax have accepted our invitation and now we are finalizing the date, time and venue for the workshop. This one day workshop will be free for students with free lunch.

At SPIE Optics + Photonics, Dirk introduced Mr. Thomas Tongue, CEO of Zomega THZ. He will be visiting Singapore beginning of November and he readily agreed to give us a talk during his visit to Singapore when requested.

We will be organizing talks by eminent Fellows of SPIE and other optical societies to enlighten us more on current research and careers in optics.

We are in talks with Optics and Photonic Society of Singapore (OPSS) to revive ACOE and restart the workshop with a different technological theme.

For regular updates on our chapters activities please visit www.spiesingapore.org