

## Activities of NanoX under IITH-JICA Friendship Project

Nanoscience and Nanotechnology (NSNT) was one of the thematic areas of the first phase of the JICA friendship project under the IITH-Japan collaboration. NSNT area was coordinated by Dr. Ashok Kumar Pandey, Associate Professor, Department of Mechanical and Aerospace Engineering, from 2013 to 2018, and Prof. Shiv Govind Singh, Professor, Department of Electrical Engineering, IIT Hyderabad from 2018-2019. Prof. Yasuhiko Arakawa from the University of Tokyo coordinated the project from the Japanese side. Under this project, there were many visits by faculties and students from IIT Hyderabad to the top ten universities of Japan. The first such visit happened in October 2013. Subsequently, we conducted one day workshop of the IITH-JICA workshop on 1 December 2014. The workshop was attended by Prof. Arakawa Tokyo University, Prof. Iwamoto Tokyo University, Prof. Hamaya, Osaka University, Prof. Tabata, Kyoto University, Assoc. Prof. Totsu Tohoku University from Japan and faculties from IIT Hyderabad. Since then, there was much successful collaboration, joint proposal followed by students and faculty visits from/to Japan.

Faculties who visited under this project:

### **Dr. Ashok Kumar Pandey**

**Host:** Prof. Shuji Tanaka, Tohoku University

#### **Outcome:**

- Visited Prof. Tanaka's laboratory.
- Prof. Tanaka's showed his interest for long term students and faculty visit.
- He has agreed to open his facility for students intern if financial support is available.

**Ongoing:** Working on a proposal to fabricate integrated MEMS devices.

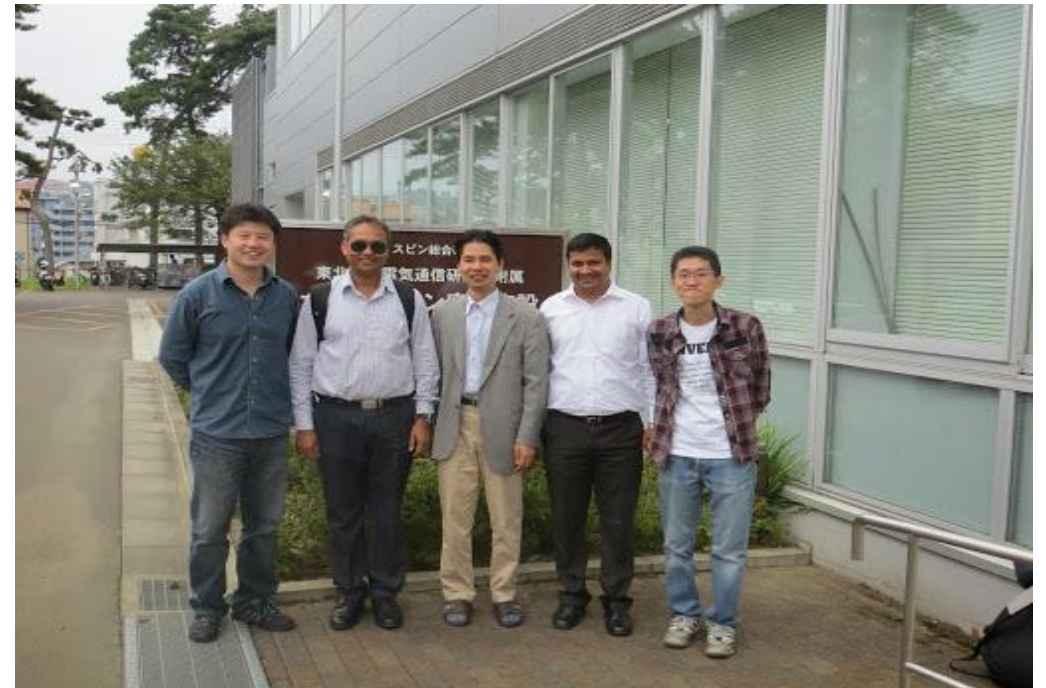
### **Dr. Ashok Kumar Pandey & Prof. Shiv Govind Singh**

**Host:** Tohoku University, The University of

Tokyo, Osaka University, Kyoto University

#### **Outcome & Plan:**

- We interacted with Nanoscience and Nanotechnology group in Japan.
- Invited them for an IITH-JAPAN Workshop



**Prof. Niwano and Prof. Y Kimura Nanoelectronics and Spintronics Lab, Tohoku University**

### **Prof. Prem Pal**

#### **Host:**

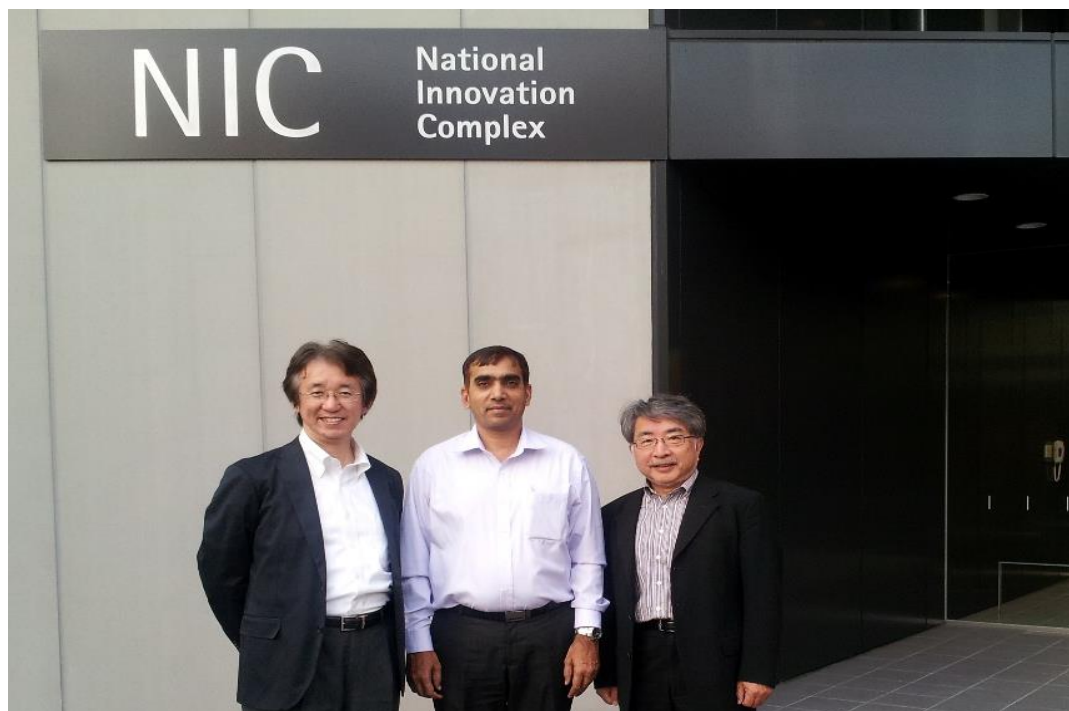
- Prof. Fumihito Arai, Nagoya University
- Prof. Kazuo Sato, Osaka University

#### **Outcome:**

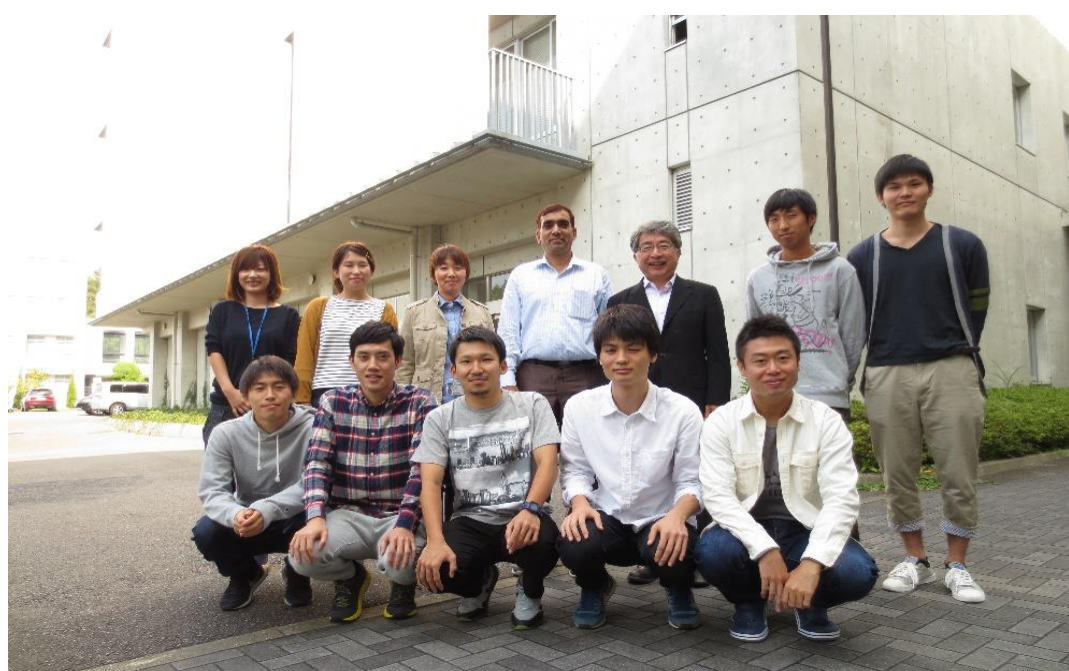
- Visited Prof. Arai at Nagoya University and exchanged our research interest in MEMS fabrication.
- Visited Prof. Sato and discussed research related with Wet anisotropic etching, joint review article and book chapter on KOH based etching. Also invited him and Prof. H. Tanaka to visit IITH.
- Prof. Sato and Tanaka are visiting IITH from 13-18th December to deliver talk in a MEMS workshop at IITH.
- We have arranged several meetings with faculty and students for their possible research visits to their lab.

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**Prof. F. Arai and K. Sato in front of National Innovation complex, Nagoya University**



**Prof. Sato and his laboratory members**

### **Dr. Sushmee Badhulika**

**Host:** Prof. Shuji Tanaka, Tohoku University

#### **Outcome:**

- Visited micro/ nanomaching research and education center and discussed scope of visit with Prof. Tanaka
- Visited Nishizawa Memorial Research Center and discussed with Prof. Hara and Toda on nano smart sensors integrated with ICT for development of smart sensors.
- Visited Nishizawa Memorial Research Center and discussed the use of FIB, FESEM, RIE, Sputtering tools and techniques for different projects by Nishizawa Center.
- Presented a seminar talk on Hybrid Nanomaterials in Sensors and Bioanalytics Applications and interaction with students.
- Concluded the visit with Prof. Tanaka and

discussed with him the visit of research scholars. He was very receptive to such ideas to take the collaboration forward.

### **Prof. Suhash Ranjan Dey**

**Host:** Prof. Kei Ameyama, Ritsumeikan University

#### **Outcome:**

- Dr. Dey gave invited talk in Soft/Hard 2014 conference at Ritsumeikan University.
- Prof. Ameyama gave invited talk at IITH on February 2015.
- One joint conference publication in TITANIUM 2015, 13th World Conference at San Diego.
- One joint poster at OZ-15, German-Japanese 8th International Symposium on Nanostructures at Kyoto on 2nd March 2015.

### **Dr. Jyoti Ranjan Mohanty**

**Host:** Koki Takanashi, Director, Institute for Materials Research, Tohoku University

#### **Outcome:**

- Collaboration to develop complementary magnetic imaging facility



### **Prof. Adarsh Sandhu**

**Dept. of Engineering Sciences**

**University of Electro-Communication (UEC)**

**Continued...**



## ***Dr. Suryanarayana Jammalamadaka***

**Host:** Osaka University

**Outcome:**

- Prof. Sujuki has asked to send samples for measurement in order to have a common project proposal.
- Some magnetostrictive samples are sent and FMR measurements will be carried out by him.



***Prof. Y. Suzuki, Osaka University***



***Prof. Nakatami, Osaka University***



***Prof. Singubara, Osaka University***

## ***Dr. Surendra Kumar Martha***

**Host:** Osaka University

**Outcome:**

- Delivered a general talk to graduate students at Osaka University.
- Plan for student exchange and possible project proposal in the area of polymer chemistry and its application in energy storage.



***Prof. Kuwabata, Professor, & Team, Department of Applied Chemistry, Osaka University***



***Prof. Hiroshi UYAMA, Department of Applied Chemistry, Osaka University***



***Content Courtesy:  
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