

IITH – Japan Connect in Design and Manufacturing

Design and Manufacturing has been one of the five areas of interaction between IITH and consortium universities in Japan, with Waseda University as the lead member from Japan. The collaboration also included other universities like Keio, Osaka, Shizuoka and Tokyo University Agricultural & Technology in addition to industrial interactions with Suzuki Corporation, Hitachi Zosen and AIST (National Institute of Advanced Industrial Science and Technology). The overall theme of these interactions has been “*Ecosystem for New Product and Process Design at Multi-scales*”.

All these collaborations were made possible through the support of JICA, based on the commitment in August 2007 between both Prime Ministers of India and Japan. These activities were sustained and enhanced by the active participation from both Japanese Universities and IITH through various academic exchanges, student scholarships, invited lectures, joint conferences and workshops. These interactions spanned multiple research subjects with some of the prominent being Additive Manufacturing, Digital Fabrication, Integrated Design & Manufacturing and Sustainable Manufacturing. The details of these activities as follows:

Additive Manufacturing (Metal) with Osaka University

- Seminars and lectures at IITH and Osaka University by the visiting faculty on Joining, Welding and Metal AM.
- Joint research and exchange under the Sakura science program and JWRI International Joint Research Collaborator (JIJReC).
- Joint project with JWRI, Osaka University, Hitachi Zosen and IITH.
- JWRI-Indo workshop on Joining and Welding at Osaka University.

- These interactions with Osaka University resulted in international journal and conference publications and the collaboration continues actively.

Digital Fabrication with Keio University

- Seminars and lectures at IITH and Keio University on 3D Printing and its adoption social fabrication.
- Jointly organized International symposium/conference(s) on Digital Fabrication with Keio University along with Deakin University and National Chiao Tung University.
- The above bi-yearly conference series has already been conducted four times and the next event is scheduled at Universitas Gadjah Mada, Indonesia.

Integrated Design and Manufacturing with Shizouka University and TUAT

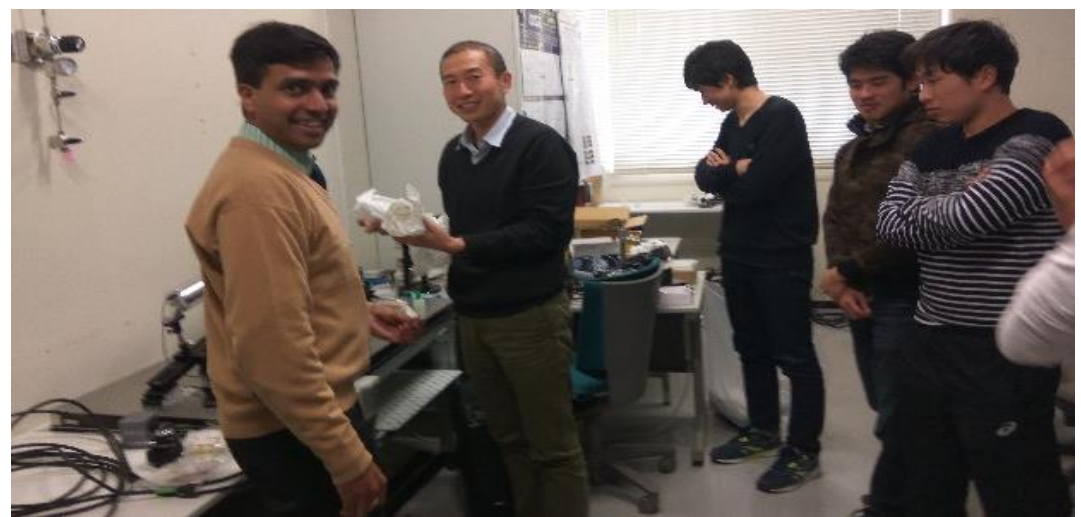
- Seminars and lectures at IITH and Shizouka University and Tokyo University of Agriculture and Technology (TUAT) on the themes of incremental sheet metal forming, crystal plasticity and bubbles and cleaning technologies.
- Joint faculty and student exchanges in addition to the Sakura science program.
- Joint workshops with Shizouka University at IITH covering both generic themes like promotion of R&D interaction and specific themes like Multi-phase flows.
- Interactions with Shizouka University resulted in starting a Fellowship supported by Suzuki Corporation, specific to IITH Faculty and PhD students.
- These interactions with Shizouka University are ongoing and strengthening further through international journal and conference publications.

Continued...

Sustainable Manufacturing with Waseda University

- Interaction with Waseda University has been in the area of Sustainable Manufacturing covering the subjects like bio-manufacturing, design & dynamics and remanufacturing.
- Joint workshops, seminars and lectures at both IITH and Waseda University.
- Short term course at IITH on “Remanufacturing”.
- Waseda University, IITH and AIST are the partners with NTNU in a Norwegian sponsored project on circular manufacturing and the interaction continues.

The Design & Manufacturing team of IITH thanks the JICA-Friendship program, Hitachi Zosen, JWRI, Sakura science program, Suzuki Corporation for their support and facilitation for these activities. We also like to thank the members from the consortium universities and other industries, organizations and universities for their earnest participation and continuous support. We are hopeful that this IITH-Japan interaction will further grow in the future.



Digital Fabrication Symposium at IITH



Keio University team at IITH



Remanufacturing Lectures at IITH by Prof. Takata of Waseda University

Continued...



ShizoukaUniv – IITH workshop@IITH



**Prof. N. Venkata Reddy (L) &
Professor Suryakumar S. (R)
Department of Mechanical and Aerospace
Engineering
IIT Hyderabad**



IITH members at Shizouka University (Sakura Science)



**Prof. N. Venkata Reddy presenting about IITH-Japan
Research Collaboration**