



Turbine Testing Lab

Monthly Bulletin August, 2016

KETEP 2015- 2017 Project

- Pipe rolling and flange fabrication for the test setup done at [Maa Shakti Engineering & Hydropower Pvt. Ltd.](#), Gaththagar, Madhyapur Thimi.
- Revamping of the test setup underway.
- Report submission to KETEP upon the [completion of Phase II of this project](#) with the major achievements as site finalization, mineral analysis of the sediments from the site, experiments on the Rotating Disc Apparatus (RDA), numerical analysis of the cross- flow turbine with the insertion of sediment and complete manufacturing drawing of the 5 kW cross- flow turbine.

Energize Nepal Project

- Partnership agreement completed among the program partners i.e. [KU](#), [Hydrolab](#), [Sintef](#) and [NTNU](#) & application for the 1st installment of the project has been sent to [Royal Norwegian Embassy \(RNE\)](#).
- Appointment of Mr. Bidhan Rajkarnikar as Assistant Manager Monitoring & Evaluation.
- Official email id for the project commenced as energizenepal@ku.edu.np

Lab activities

- Archiving of all the reports, documents, publications etc. of TTL started in [e-learning portal](#) for easier search and reference purpose.
- New battery [back up system](#) for the Rapid Prototype Machine procured and installed.
- Procurement of the materials such as C- channel, flanges, coupling etc. for the new [test rig](#).

Academic activities of Masters Student

- Casting of the guide vane test specimens at [Nepal Dhalot Udhyog Ltd.](#), Patan for accelerated test in RDA.
- Design of the test rig regarding effect of guide vane erosion on flow has been completed and the fabrication works has been awarded to [Turbine Design Services Pvt. Ltd.](#)
- Completion of the course works.

Visits

- Visit by Dr. Linda Abriola, [United States Science Envoy](#) along with the delegation team from United States Department and American Embassy, Kathmandu on 19th August 2016.
- Visit by faculties and student from [Massachusetts Institute of Technology](#), United States on 17th August 2016.



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Exchange Student

- Hosting of Katrine Støa, exchange student from [The Royal Danish Academy of Fine Arts, School of Architecture](#), Copenhagen, Denmark from 21st August 2016.
- Working at TTL & CED, KU and assisting in projects related to sketching, modeling, housing development and heritage restoration in Dhulikhel.

Internship Program

- 1 student from [Applied Physics](#) final year group started his 30 days internship program at TTL from 14th Aug, 2016 under the supervision of Mr. Nirmal Acharya.
- Working on the erosion literatures, various types of [coating techniques](#) to increase the adaptability of hydro-turbines against sediment erosion and conducting the experiments on RDA on coated specimens.

Academic Projects for Mechanical Department students from IOE, Pulchowk

- Printing of 3 types of [Archimedian Screw Turbines](#) namely Arc Tan, Power Pitch and Uniform model in Rapid Prototyping Machine (RPM) at TTL and experiments conducted at IOE for the project titled "Design Modification, Fabrication and Performance Evaluation of Archimedian Screw Turbine".
- Facilitating for the performance testing of [Logarithmic Spiral Wind Turbine](#) in wind tunnel available in Fluid Mechanics Lab of KU for the project titled "Design, Fabrication and Performance Evaluation of Logarithmic Spiral Wind Turbine".

Academic Project for Automobile & Mechanical Dept. students from Thapathali Campus

- Facilitating for the performance testing of [Archimedian Spiral Wind Turbine](#) in wind tunnel available in Fluid Mechanics Lab of KU for the project titled "Design, Fabrication and Testing of Archimedian Spiral- type Wind Turbine".