

**TRAINING WORKSHOP
ON
DENDROCHRONOLOGY: PRINCIPLES AND APPLICATIONS
(13-22, March 2015)**



Organized by

Nepal Academy of Science and Technology (NAST)
Khumaltar, Lalitpur
and
Institute of Geography
Friedrich-Alexander University Erlangen-Nuremberg
Erlangen, Germany

Background

Dendrochronology is the study of tree rings. Tree rings with its micro and macro anatomical features are widely used to study the changes in the patterns and process of the past environment. Tree rings, also known as growth rings, can be seen in cross sections within the trunks of trees. Variations in growth and ring properties allow scientists to determine climate fluctuations as well other information. Tree rings and its associated parameters are high resolution proxy climate source to measure climate change from hundreds to thousands of years back. Dendrochronology is used in other aspects like ecology, geomorphology, archaeology, pollution, hydrology and so on.

Though the dendrochronological study in Nepal was started in the late 1970s, first institutional Treering Laboratory in Nepal was established in the premises of Nepal Academy of Science and Technology (NAST) in 2009. Since the inception of the Lab, the academy has been regularly organizing the trainings and workshops on the various aspects of the dendrochronology to strengthen the research capabilities of young researchers of Nepal. In this context, NAST in collaboration with Friedrich-Alexander University Erlangen-Nuremberg, Germany is organizing an in-depth Training Workshop on Principles and Applications of Dendrochronology with hands on practical skill and field study on March 13-22, 2015 in NAST, Lalitpur. The 10 days training workshop will have both components of training: theory, and field and laboratory practical. The Training course with field study will provide ample opportunities for the trainees to learn dendrochronological sampling methods and further study and analysis of the samples in laboratory. The training will be led by Prof Dr Achim Braeuning and German colleague, along with Nepalese experts.

Organizing committee

Prof. Dr. Tribikram Bhattarai (**Coordinator**)

Dr. Dinesh Raj Bhujju

Mr. Iswor Khanal

Mr. Narayan Prasad Gaire

Topics of the training

1. Wood anatomical basics of dendrochronology, including temperate, tropical and subtropical tree species; preparation techniques (wood surfaces and microscopic thin sections)
2. Quantitative and qualitative analyses of wood anatomical features
3. Methods of tree growth detection - high resolution dendrometers
4. Sampling strategies in dendrochronology (including one-day field trip with practical exercise)
5. Measurement of different tree-ring parameters: ring width, wood density and others
6. Synchronization of tree-ring series, dating and establishment of tree-ring chronologies
7. Statistical treatment of tree-ring data (detrending techniques, quality check of tree-ring data)
8. Dendroclimatology: evaluating climatic signals in tree-ring data and climate reconstruction

9. Applied dendroecology: Examples of use of tree-ring data for applied research in hydrology, geomorphology, glaciology, vegetation dynamics and other fields
10. Dendroarchaeology: Tree-ring dating with radiocarbon and analyses of historical and archaeological wood

Eligibility and selection of candidate

The candidates who have completed their Master Degree in Botany, Environmental Science, and Forestry and with strong motivation to continue their research in various aspect of Dendrochronology in their future research are invited to apply for the training workshop along with their CV and dissertation title. Please attach copy of the transcript of your last degree and write a short essay (Motivation Note) of maximum 1000 words on Dendrochronology describing why you want to participate in the training and how are you going to utilize the knowledge in future. The shortlisted candidates will be invited for the interview before final selection.

Further advance training in Germany

Some of the successful training participants will be involved in the research project entitled *Dendroecological analyses of moisture conditions and climatically controlled ecosystem responses along an elevation gradient in the central Himalaya (Nepal)*. They will get opportunity to work in the field and lab of NAST. Based on their performance during training & field work and their motivation to continue research in same field, two participants will get opportunity for further in-depth training in the Germany and will work for two months in Institute of Geography, Friedrich-Alexander University Erlangen-Nuremberg, Erlangen, Germany as researcher of the research project.

Please send your application by **February 28th 2015** at Faculty of Science, Nepal Academy of Science and Technology (NAST), Khumaltar, Lalitpur or by Email send in npgaire2007@gmail.com. Receipt of the application send by mail will be send to your mail.

Registration Fee

Institutional: NRs 5000.00 (Five thousands rupees only)

Individual: NRs 2000.00 (Two thousands rupees only)

Duration of Training: 10 days

Venue: Nepal Academy of Science and Technology, Khumaltar, Lalitpur

Number of Seat: Limited

For details please contact

1. Prof. Dr. Tribikram Bhattarai

Central Department of Biotechnology
Tribhuvan University, Kirtipur
Mobile: 9860187141

2. Iswor Khanal

Faculty of Science
Nepal Academy of Science and Technology (NAST), Khumaltar
Mobile: 9841546708

3. Narayan Prasad Gaire

Dendrochronology Laboratory, Faculty of Science
Nepal Academy of Science and Technology (NAST), Khumaltar
Mobile: 9841381048