

Technical Workshop “New Advances in Nondestructive Evaluation  
of Wood” & Opening Ceremony of Joint International Research  
Institute of Wood Nondestructive Testing and Evaluation  
木材无损检测国际学术研讨会暨木材无损检测国际联合  
研究所揭牌仪式



# PROGRAM

## 会议指南

### Organized by

School of Technology, Beijing Forestry University, China  
IUFRU D5.01.09 “Non-Destructive Evaluation of Wood and Wood-Based  
Materials”

Key Laboratory of State Forestry Administration on Forestry Equipment  
and Automation, China

主办

北京林业大学工学院

国际林联（IUFRU）D5.01.09“木材无损检测学组”

林业装备与自动化国家林业局重点实验室

### When

May 7-9, 2018

2018年5月7-9日

### Where

Xijiao Hotel Beijing 西郊宾馆

No.18 Wangzhuang Road 王庄路 18 号

Haidian District 海淀区

Beijing, China

Beijing Forestry University 北京林业大学

No. 35 Qinghua East Road 清华东路 35 号

Haidian District 海淀区

Beijing, China

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## GUIDELINES 会议须知

1. The meeting guide will provide you with the schedule, specific arrangement and attentions of the technical workshop. Please read carefully.会议指南为您提供会议的各项日程、具体安排和注意事项，请仔细阅读。
2. Technical workshop place: The opening ceremony and technical sessions of the workshop will be held on May 8 in Xijiao Hotel, No.5 Meeting Room; the exhibition of BFU's Wood NDT Research and workshop poster presentations will be held in the morning of May 9 on BFU's campus, at the Teaching and Scientific Research Building (first floor); Academic Advisory Committee meeting will be held in the morning of May 9 on BFU's campus, at the Comprehensive Building, Conference Room 5 (2th floor).

会议地点：5月8日会议开幕式和学术报告的会场，设在西郊宾馆第五会议室；5月9日上午“北林木材无损检测科研成果和参会代表海报展”地点，设在北京林业大学学研中心一层；5月9日上午“学术委员会会议”会场，设在北京林业大学综合楼第五会议室。

3. Dining plan: There will be a welcome reception in the evening of May 7, at the Xi Yuan Seafood restaurant- Hu Dielan room of Xijiao Hotel. For general attendees, the meeting will provide lunch and dinner on May 8 and lunch on May 9; for Academic Advisory Committee members, the meeting will provide lunch and dinner on May 8 and 9. The lunch and dinner on May 8 will be in the cafeteria of Xijiao Hotel; the lunch on May 9 will be arranged on the campus of Beijing Forestry University; the dinner on May 9 will be arranged at the Xi Yuan Seafood restaurant- Hu Dielan room of Xijiao Hotel.

用餐安排：5月7日晚上见面欢迎会，安排在西郊宾馆西园海鲜酒楼蝴蝶兰间。对一般参会者，会议提供5月8日午餐和晚餐、9日午餐；对学术委员会委员，会议提供8日和9日午餐和晚餐。8日午餐和晚餐安排在西郊宾馆自助餐厅；9日午餐安排在北京林业大学校园内，9日晚餐安排在西郊宾馆西园海鲜酒楼蝴蝶兰间。

4. Meeting transfers and accommodation: For general attendees, please arrange transportation and accommodation at their own expense; for Academic Advisory Committee members abroad and outside Beijing, the meeting will provide transportation between Xijiao Hotel and the airport as well as accommodation.

会议接送与住宿：对一般参会者，请自己安排交通和住宿等事宜，费用自理；对国外和京外的学术委员会委员，会议提供在西郊宾馆与机场之间的接送以及住宿安排。

5. Meeting contact person:

Transportation: Lei Zhao

Mobile number: +8613121870177

Accommodation: Wenkai Ma	Mobile number: +8618811372152
Workshop program: Cheng Guan	Mobile number: +8615652935106
Workshop registration: Zina Ou	Mobile number: +8613126832114
Tour of the museum: Lujing Zhou	Mobile number: +8613810423909
Poster session: Jian Wen	Mobile number: +8615801467078

会务联系人员:

交通安排: 赵 磊 手机号: 13121870177

食宿安排: 马文凯 手机号: 18811372152

会务安排: 管 成 手机号: 15652935106

会议报到: 欧自娜 手机号: 13126832114

博物馆参观: 周卢婧 手机号: 13810423909

海报展览: 文 剑 手机号: 15801467078

## PROGRAM OUTLINE

**Technical Workshop “New Advances in Nondestructive Evaluation of Wood” & Opening  
Ceremony of Joint International Research Institute of Wood Nondestructive Testing and  
Evaluation  
May 7-9, 2018  
Beijing, China**

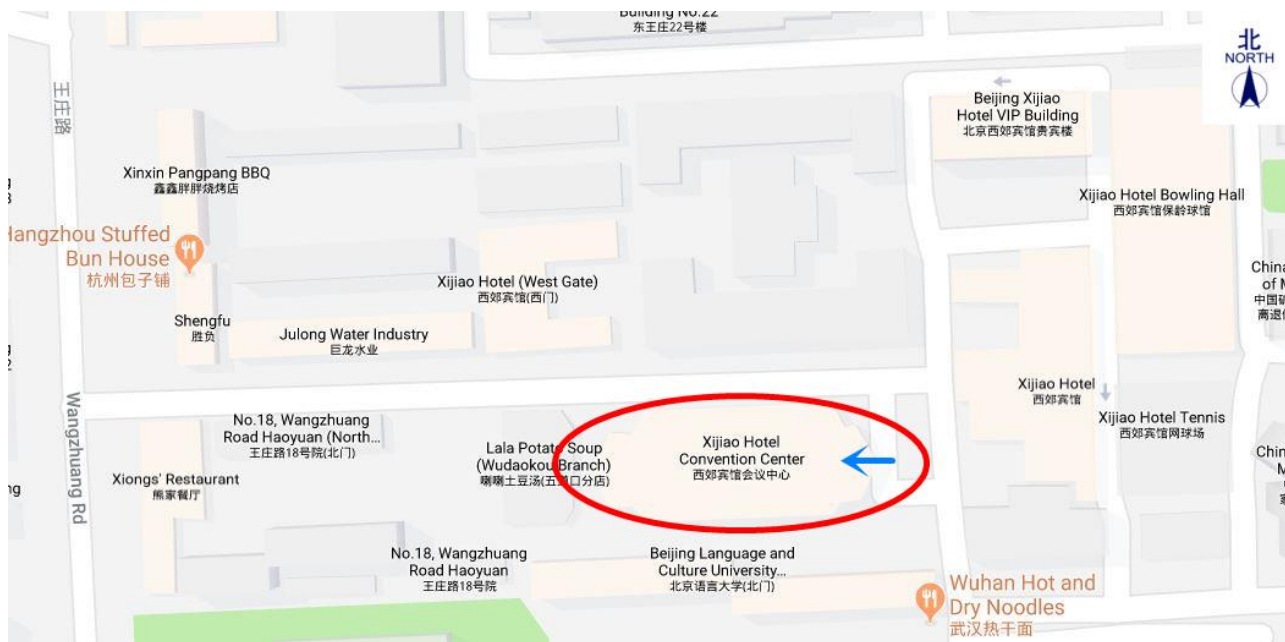
Time	Monday May 7	Tuesday May 8	Wednesday May 9	
7:00-7:30	Breakfast	Breakfast	Breakfast	
7:30-8:30		Registration 参会代表报到		
8:30-9:00		Opening Ceremony		
9:00-9:50		开幕式与揭牌仪式	Poster Session & BFU's NDT research exhibition	
9:50-10:00		Coffee break		Academic Advisory Committee meeting 学术委员会会议
10:00-12:00		Session 1 主题发言		
12:00-13:00		Lunch 自助餐	Lunch	
13:00-13:30				
13:30-14:00		Session 2 一般发言		
14:00-15:00			Tour of BFU museum	
15:00-15:30	Registration 代表报到	Coffee Break		
15:30-15:50		Session 3 一般发言		
15:50-16:00				
16:00-16:30			Meeting with FPL collaborators	
16:30-17:30				
17:30-18:00				
18:00-19:00	Welcome reception	Dinner 自助餐	Academic Advisory Committee members dinner 学术委员晚餐	
19:00-20:00				

## VENUE MAP

### Meeting Room at Xijiao Hotel



### Location of the Convention Center at the Xijiao Hotel

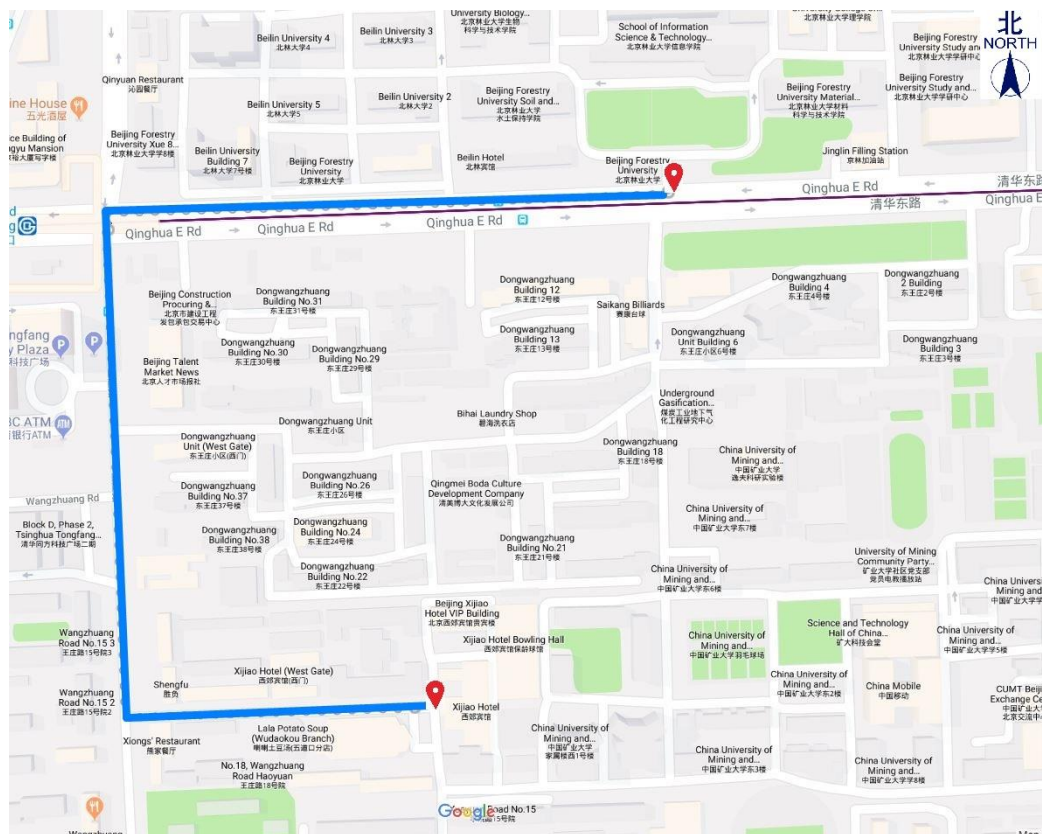


## VENUE MAP

## Campus of Beijing Forestry University



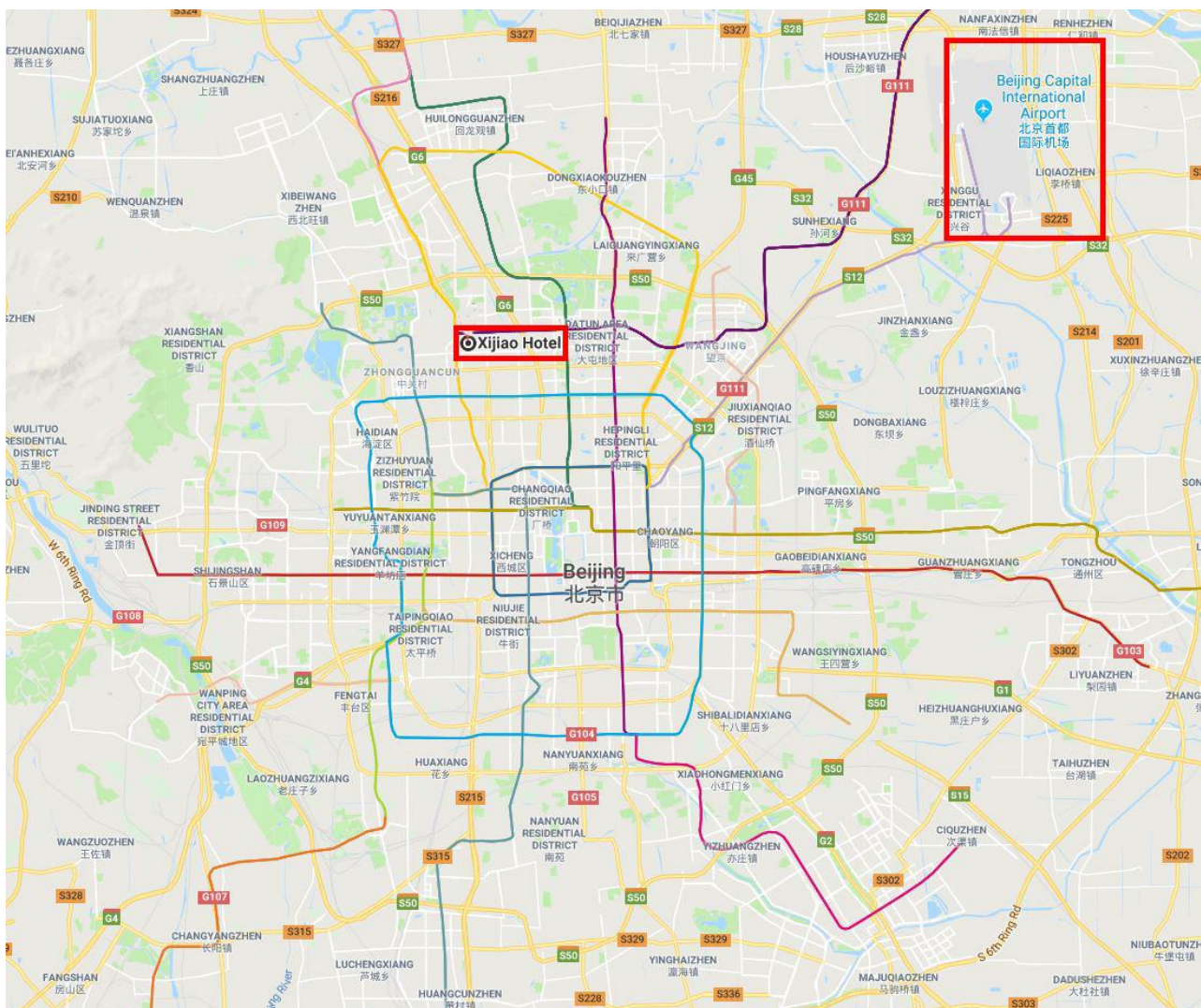
### Walking route between Xijiao Hotel and Beijing Forestry University





## TRANSPORTATION

### Location of the Xijiao Hotel



#### To Xijiao Hotel and Beijing Forestry University

Subway: Line 13 (Wu Daokou station), Line 15 (Qinghua Donglu Xikou station)

Bus: 355, 438, 594, 628, 628, Yuntong 110 (Beijing Forestry University station)

#### From Beijing International Airport, 31 km.

**The easiest transportation for the international attendees is to take a taxi between the airport to the venue. The ride takes about 60 mins and costs about RMB120.**

到西郊宾馆交通工具

地铁：地铁 13 号线（五道口），地铁 15 号线（清华东路西口）

公交：专 12 路（王庄路北口）

355 路，438 路，594 路，628 路，628 路，运通 110 路（北京林业大学）

从北京首都国际机场到西郊宾馆约 31 公里，打车约 120 元人民币。



## PROGRAM SCHEDULE

### Technical Workshop “New Advances in Nondestructive Evaluation of Wood” & Opening Ceremony of Joint International Research Institute of Wood Nondestructive Testing and Evaluation

May 7-9, 2018

Beijing, China

#### MONDAY (May 7, 2018) -Xijiao Hotel（西郊宾馆）

3:00-6:00 PM Registration- Lobby of Xijiao Hotel 报到

6:00-8:00 PM Welcome reception 欢迎晚宴（桌餐）（西郊宾馆海鲜酒楼蝴蝶兰间）

#### TUESDAY (May 8, 2018) -Xijiao Hotel（西郊宾馆）

7:00-7:30 AM Breakfast 早餐

7:30-8:30 AM Registration at Check-in Lobby (1<sup>st</sup> Floor, Convention Center) 报到

8:30-9:50 AM Opening Ceremony (No.5 Meeting Room) 开幕式与揭牌仪式 (第 5 会议  
室)

*Presider: Dr. Wenbin Li, Dean of School of Technology, Beijing Forestry University.*

Opening Ceremony to include welcome speech, guest speeches, launching the joint research institute, presenting appointment letters to the Academic Advisory Committee members, and taking group photo. 包括领导致辞、国外代表讲话、研究所揭牌、学术委员聘书颁发、代表合影等。

9:50-10:00 AM Coffee Break 茶歇

10:00-12:00 AM Session 1 主题发言

*Moderator: Dr. Houjiang Zhang, Beijing Forestry University*

1. *Dr. Robert Ross, USDA Forest Products Laboratory and Michigan Technological University, USA*

**“Nondestructive evaluation—Essential for sustainable natural resource management”**

2. *Dr. Xiping Wang, USDA Forest Products Laboratory, USA*

**“In-forest wood quality assessment”**

3. *Dr. Udo H Sauter, Forest Research Institute, Baden-Wurttemberg, Germany*

**“Nondestructive assessment of wood quality throughout wood supply chain and manufacturing process”**

4. *Dr. Satoru Tsuchikawa, Nagoya University, Japan*

**“Status, limit, and future of NIR technology for nondestructive evaluation of wood”**

12:00-1:00 PM Lunch 午餐（自助餐）

**1:30-3:30 PM      Session 2 一般发言**

*Moderator: Dr. Robert Ross, USDA Forest Products Laboratory, USA*

1. *Peter Carter, Fibre-gen. Limited, New Zealand*  
    **“Advances in deployment of non-destructive strength and stiffness measures”**
2. *Dr. Ferenc Divos, University of Sopron, Hungary*  
    **“Acoustic tools in the forest products chain from seedling to wooden structures”**
3. *Dr. John Moore, Scion, New Zealand*  
    **“DiscBot – A new automated system for measuring wood properties on discs”**
4. *Dr. Alexis Achim, Laval University, Canada*  
    **“Removing bias from LiDAR-based estimates forest canopy metrics: accounting for the effects of pulse density, footprint size and beam incidence angle”**

**3:30-3:50 PM      Coffee Break 茶歇**

**3:50-5:30 PM      Session 3 一般发言**

*Moderator: Dr. Xiping Wang, USDA Forest Products Laboratory*

1. *Mr. Guohua Shang, The Palace Museum, China*  
    **“The present situation, survey and protection of timber structures in the Imperial Palace”**
2. *Dr. Jos é Tarc ío da Silva Oliveira, Federal University of Espirito Santo, Brazil*  
    **“Application of micro-resistance drilling to evaluate eucalypt wood quality – Research and development in the Federal University of Esp írito Santo - Brazil”**
3. *Dr. Houjiang Zhang, Beijing Forestry University, China*  
    **“General introduction of wood NDT research and application in Beijing Forestry University”**
4. *Cheng Guan, Beijing Forestry University, China*  
    **“Evaluation of mechanical properties of full-size wood composite panels supported on four nodes using vibration methods”**

**6:00-7:00 PM Dinner 晚餐（自助餐）**

**WEDNESDAY (May 9, 2018) -Beijing Forestry University（北京林业大学）**

**7:00-8:30 AM      Breakfast 早餐**

**9:00-12:00 AM      Poster & Exhibit (1<sup>st</sup> floor of Teaching and Scientific Research Building)  
    **展板、仪器展示（学研中心一层）****

*Moderator: Dr. Jian Wen, Beijing Forestry University*

**10:00-12:00 AM      Academic Advisory Committee meeting (Conference Room 5 of  
    **Comprehensive Building) 学术委员会会议（综合楼第五会议室）****

*Moderator: Dr. Xiping Wang, USDA Forest Products Laboratory  
Dr. Houjiang Zhang, Beijing Forestry University*

**12:00-2:00 PM      Lunch 午餐**

**2:00-4:00 PM      Tour of BFU museum 北林博物馆参观**

*Moderator: Lujing Zhou, Beijing Forestry University*

**6:00-8:00 PM      Academic Advisory Committee members dinner 学术委员晚餐**

## INTRODUCTION OF PRESENTATIONS 学术报告内容简介

### 1. Nondestructive evaluation—Essential for sustainable natural resource management

*Robert J. Ross, Ph.D. Project Leader and Research Professor, USDA Forest Products Laboratory and Michigan Technological University, [rjross@fs.fed.us](mailto:rjross@fs.fed.us)*

This presentation will highlight the important role nondestructive evaluation plays in the sustainable use of the world's natural resources. It will begin with a brief history of the discovery, development and use of nondestructive evaluation principles for evaluation and assessment of wood materials. Several examples that show the evolution of nondestructive evaluation from a laboratory curiosity to an integral part of the wood product value chain will be presented. A discussion of the future direction for nondestructive evaluation of forest-based materials and products will be presented.

### 2. In-forest wood quality assessment

*Xiping Wang, Ph.D. USDA Forest Products Laboratory, [xwang@fs.fed.us](mailto:xwang@fs.fed.us)*

Recent research and development on nondestructive testing technologies has brought the in-forest assessment of wood and fiber properties of standing trees into forest management, resource evaluation, harvesting operation and efficient wood utilization. Significant values are associated with wood and fiber quality of our forests for production of structural lumber, engineered wood products (such as glulam, LVL and CLT), and pulping and paper. Rapid and nondestructive measurements on trees allow this value to be captured through better silvicultural practices, allocation of resources to highest value users, and application of best processing methods. This presentation reviews several emerging nondestructive technologies (SilviSvan, near infrared, resistance drilling, acoustics, and 3D laser scanning) for large-scale in-forest wood quality assessment.

### 3. Hardwood assessment for new products for a changing world

*Udo H Sauter, Forest Research Institute, Baden-Wuerttemberg, Wonnhaldestr. 4, Freiburg, Germany, [Udo.Sauter@forst.bwl.de](mailto:Udo.Sauter@forst.bwl.de)*

Climate change leads to silvicultural changes in the European forestry towards increased hardwood availability. Such increase in hardwoods and a decrease in softwoods will have a considerable impact for the sawmilling industry. Consequently, new markets and products for hardwoods must be developed. New approaches consider hardwoods in the construction sector especially as engineered timber products such as glulam and cross-laminated timber. These changes affect research efforts in terms of prioritizing topics to develop such markets. The FVA addresses the following points: 1) nondestructive characterization of hardwoods; 2) quality assessment; and 3) interface roundwood properties and product requirements. This presentation discusses a specific research focus on the use of CT technology for efficient roundwood processing.

### 4. Status, limit, and future of NIR technology for nondestructive evaluation of wood

*Dr. Satoru Tsuchikawa, Professor, Graduate School of Bioagricultural Sciences, Nagoya University, Japan, [st3842@agr.nagoya-u.ac.jp](mailto:st3842@agr.nagoya-u.ac.jp)*

Near infrared (NIR) technology in terms of transmitted or reflected spectra of electromagnetic wave ranging from 800 to 2500 nm has been mainly used for the nondestructive measurement of organic materials such as agricultural products or foods. Nowadays, it shows great potential in all facets of material assessment (for example, polymer, textile, pharmacy, petrochemical, etc.) It has been widely applied at in-line, on-line and on-site condition,

however, we should carefully consider real situation as nondestructive methodology. This presentation introduces status, limit, and future of NIR technology as agricultural spectroscopy on the basis of research topics handled by my laboratory.

**5. Advances in deployment of non-destructive strength and stiffness measures**

*Peter Carter, Chief Executive, Fibre-gen. Limited, New Zealand, [peter.carter@fibre-gen.com](mailto:peter.carter@fibre-gen.com)*

Acoustic technologies are progressively being deployed in forestry and wood processing operations particularly where end wood product values are dependent upon stiffness. Hitman technology has been developed to enable application of this technology in harsh operational environments, demanding robust ruggedized tools. Further application of resonance based technology has been applied to the challenge of assessing strength of wooden utility poles in service. Significant values are associated with stiffness in log supply for LVL veneer production and structural lumber manufacture, as well as in the management and maintenance of Utility Company's wooden pole networks. Measurement of strength and stiffness allows value to be captured through better decision-making, allocation of resource to highest value uses. The presentation reviews recent improvements of acoustic tools available for research and operational use to measure the stiffness of trees and logs in tree improvement, mid-rotation and pre-harvest inventory, harvesting and log-making, mill yard, and processing operations, and the use of NDE tools to assess residual tip strength of poles in service.

**6. Acoustic tools in the forest products chain from seedling to wooden structures**

*Dr. Ferenc Divos, Professor, University of Sopron, Hungary, [divos.ferenc@uni-sopron.hu](mailto:divos.ferenc@uni-sopron.hu)*

Wood NDT is a special research field focusing to nondestructive technique application for trees, wood and wood products. This research field has more than 50 year's history. Historically the lumber strength grading methods based on MOE measurement was the first technology adopted by the industry. Stress wave test in particleboard production was accepted as quick quality control. Ultrasonic veneer grading machines are important components of LVL and paralam plants. Stiffness prediction of trees (standing timbers) are a patented technology of Weyerhaeuser Company, USA. Selecting seedlings based on acoustic velocity in tree breeding is becoming a common technology. Using acoustic technique in the evaluation of historical wooden structures has long history. Paper deals with the above technologies, applied tools, and case studies. All these technologies are acceptable for the forest products industry if the benefits are clear for the users. Bridging the gap between wood NDT research and practical application is the main challenge recently.

**7. DiscBot – A new automated system for measuring wood properties on discs**

*Dr John Moore, Research Leader, Forest Systems, Scion, New Zealand,  
[John.Moore@scionresearch.com](mailto:John.Moore@scionresearch.com)*

The key wood properties that affect timber stiffness and distortion are density, microfibril angle, spiral grain angle and chemistry, and knowledge about the extent of intra-stem variation in these properties is required to predict timber performance. Information on these properties has often come from pith-to-bark samples, which enables the radial patterns of variation to be understood. However, such approaches do not capture the circumferential variation that exists in internal wood properties. Furthermore, the sample collection and preparation costs may also make it impractical to take samples from multiple heights up the stem of tree, thus making it difficult to capture the longitudinal variation. To address some of these challenges, we have developed a new semi-automated platform, the DiscBot, for the

rapid and cost-effective assessment of wood properties on cross-sectional discs. With the DiscBot, a disc is systematically moved under each of five measurement stations to collect data on disc size and shape, spiral grain angle, density, wood chemistry and microfibril angle. Data are collected at high resolution to give two-dimensional wood property maps for the sample. In this presentation, we describe the operation of the DiscBot and provide examples of the wood property maps that can be obtained from it.

**8. Removing bias from LiDAR-based estimates forest canopy metrics: Accounting for the effects of pulse density, footprint size and beam incidence angle**

*Dr. Alexis Achim, Director of Renewable Materials Research Centre, Laval University, Canada,  
[Alexis.Achim@sbf.ulaval.ca](mailto:Alexis.Achim@sbf.ulaval.ca)*

Airborne laser scanning (LiDAR) is used in forest inventories to quantify stand structure with three dimensional point clouds. However, the structure of point clouds depends not only on stand structure, but also on the LiDAR instrument, its settings, and the pattern of flight. The resulting variation between and within datasets can induce spurious variation in LiDAR metrics. We present two hypothesis-driven models that can be used to correct bias attributable to 1) variation in pulse density and footprint size on canopy height and 2) beam incidence angle on the vertical structure of the point clouds. This modelling effort is our first step in developing methods for correcting various LiDAR metrics that are used for area-based prediction of stand structure. Such methods may be particularly useful for monitoring forest growth over time, given that acquisition parameters often change between inventories.

**9. The present situation, survey and protection of timber structures in the Imperial Palace**

*Mr. Guohua Shang, Director, Department of Engineer and Technology, The Palace Museum, China*

**10. Application of micro-resistance drilling to evaluate eucalypt wood quality – Research and development in the Federal University of Espirito Santo, Brazil**

*Dr. José Tarcísio da Silva Oliveira, Professor, Federal University of Espirito Santo, Brazil  
[jose.t.oliveira@ufes.br](mailto:jose.t.oliveira@ufes.br)*

In Brazilian cellulose pulp sector, eucalyptus has become the main source of raw material. The large efforts towards research in breeding programs made by private companies and research institutions have increased the production of genetic materials to approximately 60m<sup>3</sup>/ha a year in a commercial scale in more than five million hectares planted in Brazil. Specific gravity is one of the most important wood quality indexes and is influenced by genetic, stand age, and environmental conditions. This presentation will report our recent research efforts on assessing specific gravity of young eucalypt plantation trees using a resistance drilling technique. A graduate program in forest science has been developed at both master's and doctoral level with a focus on investigating the use of the resistance drilling technology to evaluate wood quality in young eucalypt trees, particularly examining the effect of wood density and moisture content on resistance drilling measurements.

**11. General Introduction of Wood NDT Research and Application in Beijing Forestry University, China**



*Dr Houjiang Zhang, Professor, Beijing Forestry University, China*

**12. Evaluation of mechanical properties of full-size wood composite panels supported on four nodes using vibration methods**

*Cheng Guan, Ph. D candidate, Beijing Forestry University, China*



## INTERNATIONAL SPEAKERS’ BIO 国外发言者简介

<p><b>Robert J. Ross</b></p> <p>Dr. Bob Ross is a Project Leader at the USDA Forest Products Laboratory (FPL) and a Research Professor at Michigan Technological University. His current research focus is on the development and use of nondestructive evaluation technologies for various wood products and structures, from standing trees to historic buildings and ships. He has written or co-authored more than 250 technical reports and articles about nondestructive evaluation and jointly holds several U.S. and foreign patents. Bob is an elected fellow of the International Academy of Wood Science (IAWS) and currently serves as Co-Chair of the International Nondestructive Testing and Evaluation of Wood Symposium Series.</p>	
<p><b>Xiping Wang</b></p> <p>Dr. Xiping Wang is a Research Scientist at the USDA Forest Products Laboratory. He has over 20 years of research experience in the areas of nondestructive evaluation of wood, wood quality assessment, and condition assessment of wood structures. He has published over 180 research papers, been granted eight U.S. and foreign patents. He is an elected fellow of the International Academy of Wood Science (IAWS) and the associate editor of the Journal of Materials in Civil Engineering. He also serves as the Research Group Coordinator of International Union of Forestry Research Organizations (IUFRO) D5.02 and holds adjunct faculty appointments at Mississippi State University and Beijing Forestry University.</p>	
<p><b>Udo Sauter</b></p> <p>Dr. Udo Sauter is Head of the Forest Utilization Department at Forest Research Institute of Baden-Wuerttemberg (FVA) in Freiburg, Germany. His research focuses on developing nondestructive test methods to evaluate and characterize roundwood and sawn timber, both in forest stands and sawmills, and determine quality and value of forest resources. Together with his team, Udo has worked on developing and implementing new and modified algorithms for automated detection of inner stem structures and 3D-roundwood parameters using CT and optical 3D-scanner technologies. He also conducts a wide range of research projects focused on optimization technologies and processes along the forest-wood-chain. He has published more than 150 publications.</p>	

<p><b>Satoru Tsuchikawa</b></p> <p>Dr. Satoru Tsuchikawa is a full professor at the Graduate School of Bioagricultural Sciences in Nagoya University, Japan. His main research area is the application of NIR spectroscopy to wood and various agricultural products. He has over 25 years of research experience in this field and published more than 100 papers. He has won several awards, including the Büchi NIR Award (2003) and the PerkinElmer Award (2003). He serves both the secretary-general of Asian NIR Consortium and the President of Japan Council for NIR Spectroscopy.</p>	
<p><b>Peter Carter</b></p> <p>Mr. Peter Carter is the Chief Executive of Fibre-gen, a technology company in New Zealand. Prior to starting his acoustic tech firm, Peter had 36 years of experience with Carter Holt Harvey. Peter has a huge depth of understanding and experience in the development of technology relevant to forest industry needs. He has broad experience from a wide range of technology development projects along the forest products value chain. His focus on research and development with subsequent commercialisation on acoustic technology created ample opportunities for tree breeders, forest growers, log producers and log processors to capture greater value in forest production.</p>	
<p><b>Ferenc Divos</b></p> <p>Dr. Ferenc Divos (Frank) is a full professors of the University of Sopron, Hungary. A physicist by training, Frank used to work at the Paks nuclear power plant before starting his academic carrier in Sopron. His specialty is in nondestructive testing and evaluation of wood, which he has pursued with much energy and enthusiasm. Throughout the years, Frank travelled much and gave presentations at many conferences, seminars and training courses.</p>	

<p><b>John Moore</b></p> <p>Dr. John Moore has 20 years’ experience in forest research and specializes in quantitative silviculture. John’s current research is focused on quantifying the effects of forest management on wood quality and the resulting impacts on solid timber performance, tree biomechanics and allometry. John spent eight years in Scotland and the Pacific Northwest working on a range of different tree species, including Douglas-fir, Sitka spruce, Scots pine and larch. John is currently research leader for the Systems Biology group within Forest Systems team at Scion in New Zealand. He has published over 50 refereed papers on different aspects of forest management.</p>	 A portrait of Dr. John Moore, a man with short brown hair, wearing a light blue and white checkered button-down shirt. He is looking directly at the camera with a slight smile. The background is a soft-focus green, suggesting an outdoor setting.
<p><b>Alexis Achim</b></p> <p>Dr. Alexis Achim is a full professor and the Director of the Renewable Materials Research Centre at Laval University, Canada. He has authored a total of 55 publications in the fields of silviculture, wood quality assessment and wood processing. He has worked on the use of acoustic sensors for the non-destructive assessment of wood properties and he has focused more recently on analysing LiDAR data acquired over forested areas to predict wood supply characteristics at a wider scale.</p>	 A portrait of Dr. Alexis Achim, a man with short brown hair and glasses, wearing a light blue button-down shirt. He is smiling at the camera. The background is a neutral, light-colored wall.
<p><b>Jose Tarcisio da Silva Oliveira</b></p> <p>Dr. Jose Tarcisio is a full professor at the Department of Forest and Wood Science in Federal University of Espirito Santo, Brazil. His research is focused on forest products technology development with an emphasis on wood anatomy, quality evaluation of eucalypt for solid wood products and cellulose. He has published over 40 research papers in scientific journals in last five years and is currently advising several graduate students.</p>	 A portrait of Dr. Jose Tarcisio da Silva Oliveira, an older man with grey hair and glasses, wearing a light blue button-down shirt. He is looking slightly to the right of the camera. The background is a soft-focus outdoor scene with a body of water.

## ABOUT JOINT INTERNATIONAL RESEARCH INSTITUTE OF WOOD NONDESTRUCTIVE TESTING AND EVALUATION

### 木材无损检测国际联合研究所情况简介

The Joint International Research Institute of Wood Nondestructive Testing and Evaluation was established as a university-level scientific research platform at Beijing Forestry University in November 2017. Its mission is to further strengthen international scientific research cooperation in the field of nondestructive testing and evaluation of wood and wood-based materials, expand relevant scientific exchanges at home and abroad, and promote the research development and technology transfer of advanced nondestructive techniques. This joint international research institute will become a new platform of wood nondestructive testing and evaluation for international multilateral scientific research collaboration as well as a solid supporting point for reaching the “internationally known” educational goals of Beijing Forestry University.

北京林业大学“木材无损检测国际联合研究所”，是于2017年11月批准成立的校级科研平台。目的是进一步加强木材无损检测方向科学研究的国际合作，扩大国内外相关学术交流，促进木材无损检测仪器设备开发和技术推广。研究所目标是成为木材无损检测国际多边科研合作的新平台，成为北京林业大学“国际知名”办学目标的一个坚实支撑点。

The institute’s honorary director, director, director of academic advisory committee and the members of the first academic advisory committee are as follows:

Honorary director of the institute: Dr. Robert J. Ross (USDA Forest Products Laboratory)

Director of the institute: Dr. Houjiang Zhang (Beijing Forestry University)

Director of the academic advisory committee: Dr. Xiping Wang (USDA Forest Products Laboratory)

研究所的名誉所长、所长、学术委员会主任及第一届学术委员会的组成人选如下。

研究所名誉所长：Robert J. Ross（美国林产品实验室）

研究所所长：张厚江（北京林业大学）

学术委员会主任：Xiping Wang（王喜平，美国林产品实验室）

Academic advisory committee members 学术委员会组成：

Dr. Alexis Achim, Director of Renewable Materials Research Centre, Laval University, Canada  
加拿大拉瓦尔大学教授

Dr. Bruce Allison, Professor, University of Wisconsin-Madison, USA 美国威斯康星大学教授

Dr. Ferenc Divos, Professor, University of Sopron, Hungary 匈牙利肖普朗大学教授

Dr John Moore, Research Leader, Forest Systems, Scion, New Zealand 新西兰木材工业研究所研究员

Dr. Jos éTarc ío da Silva Oliveira, Professor, Federal University of Espirito Santo, Brazil 巴西朗图圣多明联邦大学教授

Mr. Peter Carter, Chief Executive, Fibre-gen. Limited, New Zealand 新西兰 Fibre-gen 公司总裁

Dr. Robert J. Ross, Project Leader and Research Professor, USDA Forest Products Laboratory and Michigan Technological University, USA 美国农业部林产品实验室研究员，美国密西根理工大学教授

Dr. Satoru Tsuchikawa (土川觉), Professor, Graduate School of Bioagricultural Sciences, Nagoya University, Japan 日本名古屋大学教授

Dr. Turker Dundar, Professor, Istanbul University, Turkey 土耳其伊斯坦布尔大学教授

Dr. Udo H Sauter, Research Leader, Forest Research Institute, Germany 德国林业研究院研究员

Dr. Xiping Wang (王喜平), Research Forest Products Technologist, USDA Forest Products Laboratory, USA 美国农业部林产品实验室研究员

吴义强 (Yiqiang Wu), 中南林业科技大学教授 (Professor, Central South University of Forestry and Technology)

傅峰 (Feng Fu), 中国林科院木材工业研究所研究员 (Professor, Research Institute of Wood Industry, Chinese Academy of Forestry)

曹金珍 (Jinzhen Cao), 北京林业大学教授 (Professor, Beijing Forestry University)

李光辉 (Guanghui Li), 江南大学教授 (Professor, Jiangnan University)

李文彬 (Wenbin Li), 北京林业大学教授 (Professor, Beijing Forestry University)

黎冬青 (Dongqing Li), 北京国文信文物保护有限公司高工 (Senior Engineer, Beijing Guowenxin Cultural Relics Protection Co. Ltd)

刘云飞 (Yunfei Liu), 南京林业大学教授 (Professor, Nanjing Forestry University)

王立海 (Lihai Wang), 东北林业大学教授 (Professor, Northeast Forestry University)

尚国华 (Guohua Shang), 故宫博物院研究员 (Professor, The Palace Museum)

王爽 (Shuang Wang), 北京颐和园研究员 (Professor, The Summer Palace)

赵东 (Dong Zhao), 北京林业大学教授 (Professor, Beijing Forestry University)

张厚江 (Houjiang Zhang), 北京林业大学教授 (Professor, Beijing Forestry University)

张文革 (Wenge Zhang), 中国文物保护技术协会-文物建筑安全检测鉴定与抗震评估专业委员会研究员 (Professor, Committee of Safety Inspection & Assessment and Seismic Evaluation for Heritage Building)