

Mariko Yamasaki
Graduate School of Bioagricultural Sciences
Nagoya University
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1. EDUCATION (degree, year awarded, institution, primary focus/major)

Dr. Agriculture, 2001, Nagoya University, Mechanical behavior of wood under combined stress / Timber engineering

Dr. Engineering, 2007, Nagoya Institute of Technology, Basic Research on the Construction of a Reuse System for Deconstructed Wood / Architecture and Design

2. EMPLOYMENT EXPERIENCE

Postdoctoral researcher, Japan Society for the Promotion of Science

Research Assistant of Graduate School of Engineering Science, Osaka University

Core Research Organization Researcher (Lecturer), Industry-Academia-Government Collaboration Center, Nagoya Institute of Technology

Assistant Professor, Department of Architecture, National Institute of Technology, Gifu College

Associate Professor, Graduate School of Agricultural Sciences, Nagoya University

3. STUDENTS MENTORED (past four years)

3 Doctoral Students, 8 Master's students, and 9 Bachelor students

4. PRIMARY RESEARCH AREA WITH UP TO FOUR CURRENT RESEARCH PROJECTS

[Primary research]

- Static and dynamic mechanical behavior under various loading modes
- Mechanical research and nondestructive evaluation of full-sized wood
- Mechanical research of aged wood from microscale to macroscale

[Recent works]

- Wood utilization in urban project with practitioners, government, general citizen, students and children
- LCCO₂ evaluation of wooden buildings and the evaluation of the contribution of wooden buildings to the SDGs
- Development of joints and dowel beams using local lumbers with local companies
- Full-scale fatigue behavior of deteriorated woods and aged wood

I have conducted numerous mechanical studies on a wide range of scales, from cell walls to full-scale buildings. In the research on the supply and demand balance in the construction use of artificial forest resources, she carried out simulation considering the difference of mechanical properties among trees and the distribution of member's required performance in buildings, then pointed out the challenges both of logging and structural planning.

I contributed many mechanical studies of old wood used in buildings for a long period of time, which revealed changes in the mechanical performance of old wood under various loading modes.

I made it possible to evaluate the mechanical properties of members inside buildings using stress waves, which is useful for building preservation. I am also keen to work with industry on climate change solutions. For example, her research on LCCO₂ evaluation of wooden buildings focusing on local production systems and evaluation for wood construction on SDGs contribution has received wide attention.

5. PROFESSIONAL ACTIVITIES AND ACHIEVEMENTS (Memberships, Editorial boards, professional society leadership roles, awards, honors)

The Japan Wood Research Society, Editorial board member of the journal (former)

Wood Technological Association of Japan, Director of Chubu Branch

The Society of Materials Science, Japan. Director of Tokai Branch

Architectural Institute of Japan, Editorial board member of "Journal of architecture and building science" (former)

NPO Wood Utilization in Urban Project, Director

[Awards]

- The 1st Aichi Prefecture Young Researcher Encouragement Program "Wakashachi Encouragement Award", Excellence Award, 2006. "Experimental operation of a demolished wood reuse system mainly in the western region of Aichi Prefecture"
- Japan Wood Design Award, Social Design Category, Communication Field, 2016. "Wood Utilization in Urban Project"
- Aichi Environment Award, Bronze Prize, 2020. "Wood Utilization in Urban Project in Nagoya University, Nishiki 2-chome Community Renovation Council and Wood and Wooden Building Student Association, MOKKO".

6. PUBLICATIONS (3-5 most important contributions (publications, seminars, graduates, etc.)

1. Yamasaki, M.; Sasaki, Y.: Determining Young's modulus of timber based on a strength database and stress wave propagation velocity. Part 1: A new estimation method of Young's modulus employing Monte Carlo simulation, *Journal of Wood Science*, 56, 4, 269-275, 2010.
2. Yamasaki, M.; Uchida, M.; Torichigai, T.; Sasaki, Y.: Strain Measurement and Stress Estimation of Axial Members in the Traditional Wooden Buildings, *Journal of Wood Science*, 60, 403-413, 2014.
3. Yamasaki, M; Tsuzuki, C; Sasaki, Y; Onishi, Y: Influence of Moisture Content on Estimating Young's Modulus of Full-scale Timber Using Stress Wave Velocity, *Journal of Wood Science*, 63, 3, 225-235, 2017.
4. Lee, C. G., Yamasaki, M., Sugimoto, T., Sasaki, Y.: Synchrotron X-ray measurements of cellulose in wood cell wall layers of *Pinus densiflora* in the transmission and reflectance modes. Part 1: results without loading, *Holzforschung*, 73, 7, 613-619, 2019, (corresponding author) .
5. Imaeda, K., Yamasaki, M., Kojima, E., Lee, C. G., Sugimoto, T., Sasaki, Y.: Energetic Investigation of Aging Effect on Mechanical Behavior in Wood by Means of XRD Measurement, *International Journal of Architectural Heritage*, Doi.org/10.1080/ 15583058.2020.1743793, 2020, (corresponding author) .