Kaunas University of Technology

QUALITY INSPECTION SYSTEMS FOR WOOD AND WOODEN COMPOSITES

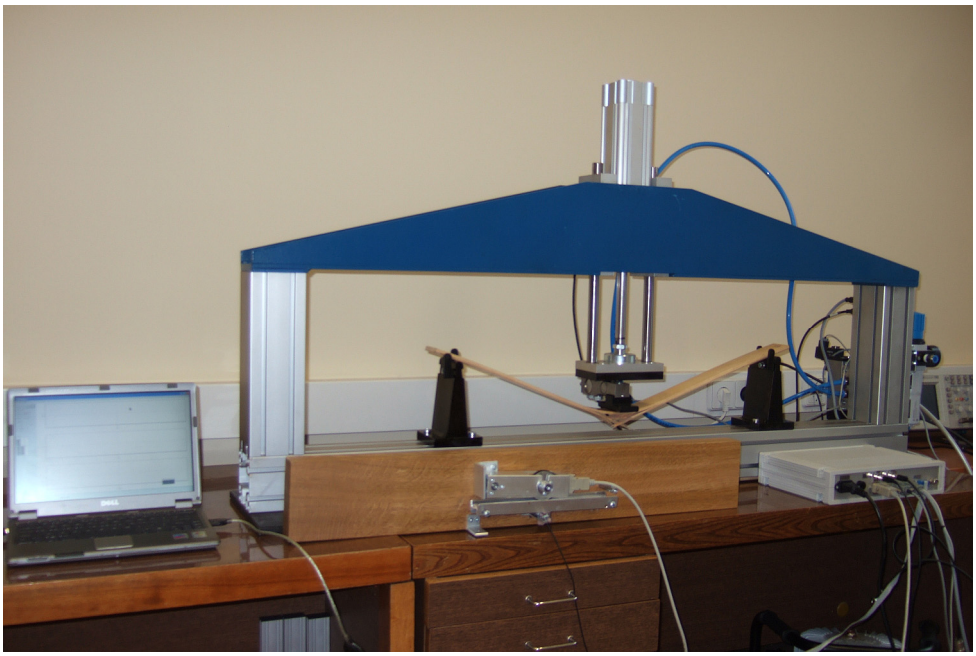


Fig. 1. **Acoustic emission testing in bending small size specimens**

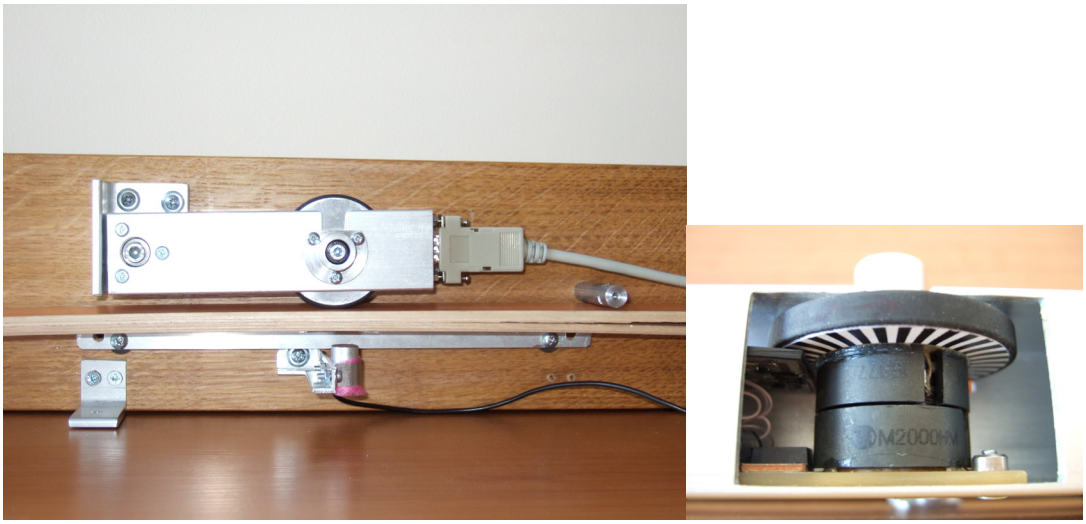
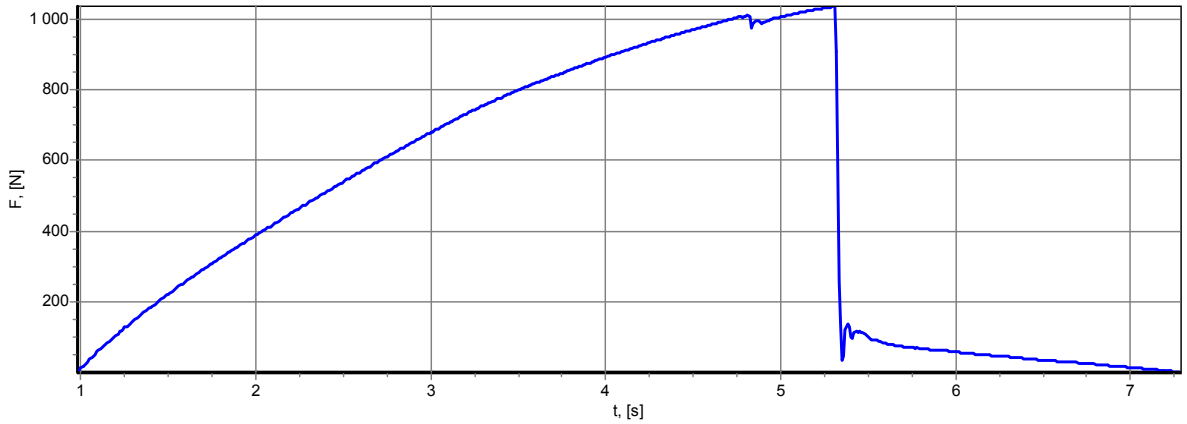
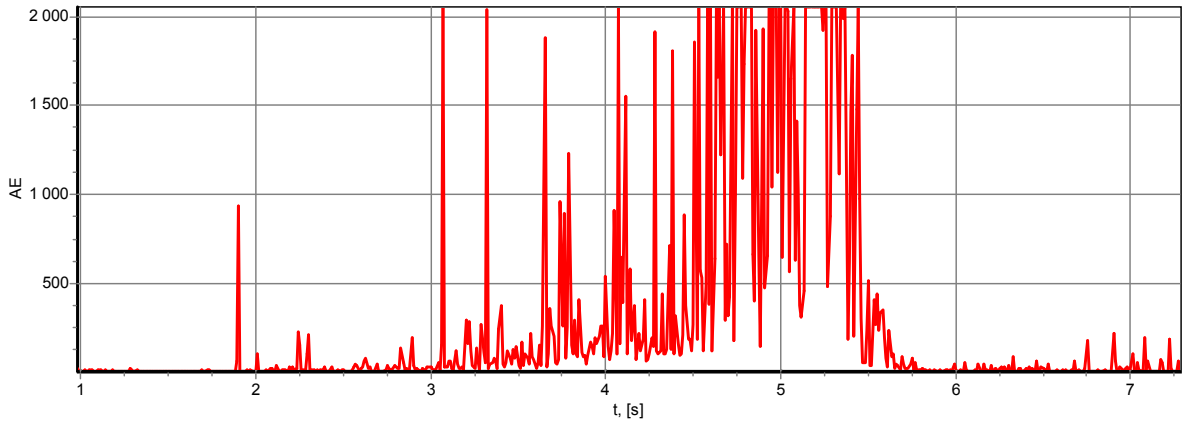


Fig. 2. **Device for continuous ultrasonic scanning and NDT defect detection in glued lines**



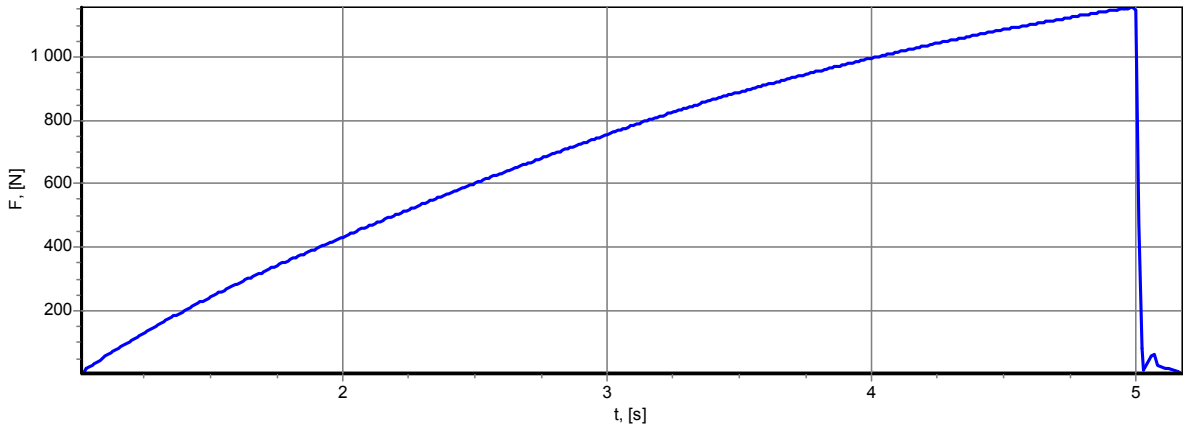
a)



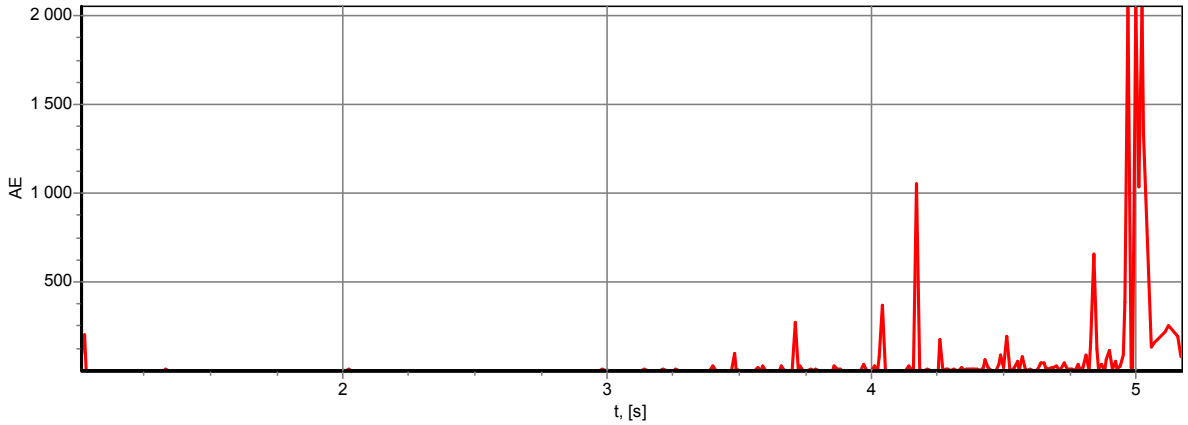
b)

Fig. 3. **Acoustic emissions in bending curved laminated wooden beam (low bonding quality)**

a) load-time graph, maximal force 1036 N; b) acoustic emission-time graph.



a)



b)

Fig. 4. **Acoustic emissions in bending curved laminated wooden beam (high bonding quality)**

a) load-time graph, maximal force 1158 N; b) acoustic emission-time graph

Note, that force to failure in Fig. 4 is only 12 % higher than in case Fig. 3. Saying *Crackle but not break!* seems to be correct!

Fig. 5. **Sensors for measuring acoustic emissions**

ULTRASOUND INSPECTION OF STIFFNESS AND MOISTURE CONTENT IN WOOD

Fig. 6. **Ultrasound inspection of moisture content for different grain orientation**

Fig. 7. **Stiffness-strength estimation and defect inspection**

Kaunas University of Technology

Dr. assoc. prof. Antanas Baltrusaitis
Faculty of Design and Technologies
Department of Mechanical Wood Technology
Studentų str. 56
LT-51424 Kaunas, Lithuania
Phone +370 37 30 02 30 / 35 38 63
Fax. +370 37 35 38 63
Mob. phone +370 686 38 244
e-mail: antanas.baltrusaitis@ktu.lt

Prof. Vytautas Augutis,
Faculty of Telecommunications and Electronics
Measurement Technologies Laboratory
Studentu str. 50-445,
LT-51368 Kaunas, Lithuania
Tel +370 37 300542
e-mail: vygau@ktu.lt

dipl. eng. Gintautas Balčiūnas
e-mail : gintautasbalc@gmail.com