2nd Workshop on application of NIR spectroscopy for wood science and technology research

NIR & WOOD – SOUNDS GOOD! #2

In memoriam of

Dr Federico Prandi (1974 – 2016)

Book of abstracts

April 19-21, 2016

CNR-IVALSA, Via Biasi 75, 38010 San Michele all' Adige, Italy

edited by:

Jakub and Anna Sandak

co-organized by:

National Research Council, Trees and Timber Institute (CNR-IVALSA)

Italian Society for NIR Spectroscopy (SISNIR)

COST Action FP1303 "Performance of Biobased building materials"

COST Action FP1407 "Understanding wood modification through an integrated scientific and environmental impact approach (ModWoodLife)"

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Workshop: Application of NIR spectroscopy for wood science and technology research - NIR & WOOD – SOUNDS GOOD!

Book of abstracts

SPIRMADBOIS project: Using NIR spectroscopy for a sustainable forest resources management in Madagascar

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Forests in Madagascar are rich in wood species and exhibit a remarkable endemism rate. However, forest loss is a major environmental issue mainly driven by land conversion for agricultural purposes, the growing domestic demand in wood products and the illegal trade of precious wood for international markets.

Forest sustainable management requires a better knowledge of forest and wood properties and uses as well as specific tools to deal with. Unfortunately, few studies have been done regarding properties of Madagascar timber species. Only 200 out of the 4000 existing species have been described to date in terms of their mechanical, durability and physical properties. Some wood species like *Dalbergia* sp. (48 species) cannot be identified from log observations. A quick and reliable method to estimate wood properties and tools to ensure traceability for legal timber control purpose are therefore essential to improve the management of Madagascar's forest resources.

This paper introduces the SPIRMADBOIS project that aims to contribute to the sustainable forest management, plantations and natural forests alike, by providing tools based on NIR spectroscopy analysis. Specific objectives to use NIR spectroscopy are:

- to estimate wood properties of one plantation species (*Eucalyptus robusta*),
- to determine geographical provenances of *Eucalyptus robusta* from Madagascar using wood and/or leaves samples,
- to estimate wood properties of 60 natural forest species,
- to distinguish between rosewood and palissander (both belong to the *Dalbergia* genus) using wood samples.

This paper will present on-going progress focused on NIR spectroscopy. By participating in the "Application of NIR spectroscopy in wood science and technology" workshop, we grasp opportunities to create an efficient network amongst NIR specialists, to exchange experiences and to discuss our preliminary results.