

# Web of Science

Search

Search Results

My Tools ▾

Search History

Marked List

 Look Up Full Text


Save to EndNote online ▾

Add to Marked List

84 of 723

## Characterization of two maritime pine tannins as wood adhesives

By: Navarrete, P (Navarrete, P.)<sup>[1]</sup>; Pizzi, A (Pizzi, A.)<sup>[1,2]</sup>; Pasch, H (Pasch, H.)<sup>[3]</sup>; Rode, K (Rode, K.)<sup>[4]</sup>; Delmotte, L (Delmotte, L.)<sup>[5]</sup>

[View ResearcherID and ORCID](#)

### JOURNAL OF ADHESION SCIENCE AND TECHNOLOGY

Volume: 27 Issue: 22 Pages: 2462-2479

DOI: 10.1080/01694243.2013.787515

Published: NOV 1 2013

[View Journal Impact](#)

### Abstract

Maritime pine tannins from the two suppliers BIOLANDES and DRT were used in combination with paraformaldehyde (5%), hexamine (6%) and glyoxal (9%) as hardener in the preparation of adhesives for wood-based panels. Both tannins showed similar structures according to the matrix-assisted laser desorption/ionization-time of flight analysis. A high reactivity has been checked by gel time measurements and the viscosity increase. Already the BIOLANDES and the DRT tannin alone registered an internal bond (IB) of 0.4MPa without any hardener. The BIOLANDES tannin with paraformaldehyde could fulfil the European standard EN 312. In general, DRT tannin obtained the best mechanical results. However, the pH and the moisture content play a fundamental role for the final IB. Thus, DRT tannin with glyoxal as hardener at high pH and moisture content gave an IB of 0.51MPa. The mechanical resistance differences between BIOLANDES and DRT tannin were confirmed by the C-13 NMR spectra. DRT tannin presents a lower polymerization de than BIOLANDES, and more reactive sites are available.

### Keywords

**Author Keywords:** tannins; structures; MALDI-TOF; internal bond; C-13 NMR spectra

**KeyWords Plus:** LASER-DESORPTION IONIZATION; INDUCED RADICAL AUTOCONDENSATION; INDUCED ACCELERATED AUTOCONDENSATION; TOF MASS-SPECTROMETRY; POLYFLAVONOID TANNINS; COMPARATIVE KINETICS; POLYCONDENSATION RESINS; SYNTHETIC-POLYMERS; ZERO-EMISSION; FORMALDEHYDE

### Author Information

**Reprint Address:** Pizzi, A (reprint author)

+ Univ Lorraine, LERMAB, 27 Rue Philippe SEGUIN,BP 1041, F-88051 Epinal, France.

#### Addresses:

+ [ 1 ] Univ Lorraine, LERMAB, F-88051 Epinal, France

- [ 2 ] King Abdulaziz Univ, Jeddah 21413, Saudi Arabia

#### Organization-Enhanced Name(s)

King Abdulaziz University

+ [ 3 ] Univ Stellenbosch, Dept Chem & Polymer Sci, ZA-7602 Stellenbosch, South Africa

[ 4 ] Deutsch Kunststoff Inst Darmstadt, Analyt Dept, D-64289 Darmstadt, Germany

+ [ 5 ] CNRS LRC 7228, M IS2, F-68057 Mulhouse, France

**E-mail Addresses:** [antonio.pizzi@enstib.uhp-nancy.fr](mailto:antonio.pizzi@enstib.uhp-nancy.fr)

## Citation Network

4 Times Cited

47 Cited References

[View Related Records](#)



**Create Citation Alert**

*(data from Web of Science Core Collection)*

### All Times Cited Counts

4 in All Databases

4 in Web of Science Core Collection

0 in BIOSIS Citation Index

0 in Chinese Science Citation Database

0 in Data Citation Index

0 in Russian Science Citation Index

0 in SciELO Citation Index

### Usage Count

Last 180 Days: 0

Since 2013: 30

[Learn more](#)

### Most Recent Citation

Basta, Altaf Halim. Beneficial effect of new activated carbons in enhancing the performance of particle boards from UF-rice straw . PIGMENT & RESIN TECHNOLOGY, 2017.

[View All](#)

### This record is from:

**Web of Science Core Collection**  
- Science Citation Index Expanded

### Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

**Publisher**

TAYLOR & FRANCIS LTD, 4 PARK SQUARE, MILTON PARK, ABINGDON OX14 4RN, OXON,  
ENGLAND

**Categories / Classification**

**Research Areas:** Engineering; Materials Science; Mechanics

**Web of Science Categories:** Engineering, Chemical; Materials Science, Multidisciplinary; Mechanics

**Document Information**

**Document Type:** Article

**Language:** English

**Accession Number:** WOS:000324611200007

**ISSN:** 0169-4243

**eISSN:** 1568-5616

**Journal Information**

**Table of Contents:** [Current Contents Connect](#)

**Impact Factor:** [Journal Citation Reports](#)

**Other Information**

**IDS Number:** 220UA

**Cited References in Web of Science Core Collection:** 47

**Times Cited in Web of Science Core Collection:** 4