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The National Science Foundation



The Tree-Ring Society



Regent Instruments



The University of Arizona  
Institute of the Environment



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Aurora Storage Products



The University of Arizona Accelerator  
Mass Spectrometry Lab



Elsevier (publishers of *Dendrochronologia*)

# Image Analysis for Forest Science

Regent Instruments Inc.



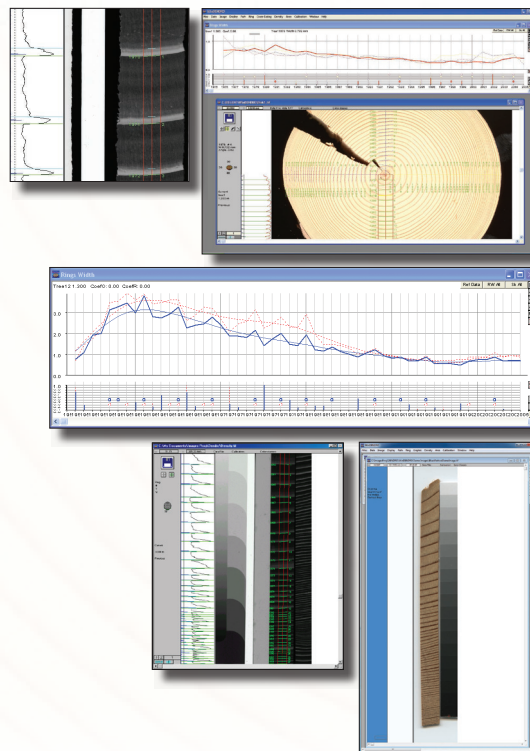
since 1991

## WinDENDRO™

Accurate Tree-Ring Analyser

### Features

- ✓ Automatic / Interactive ring detection with adjustable sensitivity
- ✓ Unlimited number of radii or paths can be created
- ✓ Multi-segment paths allow analysis of damaged disks, curved cores or rings perpendicularly to their boundary
- ✓ Earlywood/Latewood boundary measured using density or light intensity
- ✓ Ring-widths and Cross-dating graphics
- ✓ Correlation functions
- ✓ Tucson decadal formatted text file accepted as cross-dating reference
- ✓ Smoothing spline curve can be displayed in order to choose the best parameters for detrending
- ✓ Interactive quantification of compression and reaction wood
- ✓ Wood density analysis using x-ray films, digital x-ray imaging, or the "Blue Intensity" reflected-light method
  - Multiple density measurements can be saved on a ring or pixel basis
  - Available per ring: ring width, earlywood and latewood width, ring maximum, minimum and mean density, earlywood and latewood mean density, and ring boundary orientation
  - Available per pixel along a ring path: pixel density or light intensity, and slit orientation
- ✓ XLSTEM™ module available for stem analysis: mean radius, diameter and area per disk, tree height and volume as a function of age or year

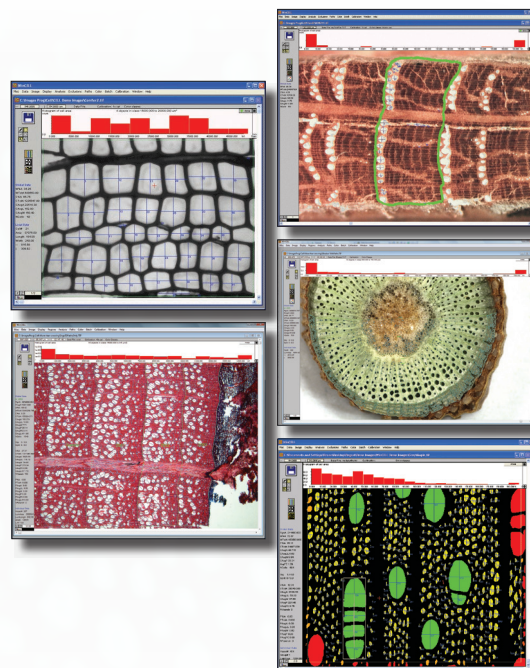


## WinCELL™

Specifically Designed for Wood Cell Analysis

### Features

- ✓ Anatomical analysis and quantification of wood cell structure parameters over annual rings:
  - lumen area, perimeter, form coefficient
  - lumen length and width
  - wall thickness
  - lumen and wall area in function of their color
- ✓ Spatial distribution to analyse variations in function of cell position on annual rings
- ✓ Flexible tools to exclude any image region from analysis
- ✓ Debris filtering
- ✓ Analyses cells per annual ring for one or more rings per image
- ✓ Data computed on a yearly basis in a format similar and compatible with WinDENDRO™ and with our stem analysis software XLStem™
- ✓ Integrated knowledge of wood cell anatomy and annual tree-ring formation produces data suited for wood scientists
- ✓ Analyses images of thin wood slices mounted on a microscope with a camera or very high resolution images of regular wood cores or disks, or of woody roots (xylem) acquired with a scanner or a camera



[www.regentinstruments.com](http://www.regentinstruments.com)

[sales@regentinstruments.com](mailto:sales@regentinstruments.com)



# Advancing a New Science: Dendro-Storology



CERTIFIED BUSINESS SERVICES, INC.

## Dendro-Storology

noun. \,den-(,)drō-stor-'ä-lə-jē\  
Definition: The study of tree ring storage.

Ok, we know the field of “Dendro-Storology” doesn’t really exist, but we do like to think of ourselves as the authority for all things storage, including tree-ring samples.

That is why the University of Arizona’s Laboratory of Tree-Ring Research engaged the experts at Aurora Storage Products and Certified Business Services to develop a custom Mobile Storage System for its archival needs.

### Unique System Benefits:

#### Space Efficient Mobile System

Stores 50% more tree-ring specimens than conventional shelving in less space

#### Heavy-Duty Construction

Holds a higher weight capacity than most shelving to store large and heavy samples

#### Product Flexibility

Multiple shelf styles to store cured and uncured wood samples.

#### Barrier Free Track

ADA compliant with no channels to accumulate debris

#### Limited Lifetime Warranty

Our promise for long system life



### Aurora Mobile Storage System

**Top View:** Wire shelving for air circulation for uncured tree-ring specimens, fresh from the field

**Bottom View:** Mobile with standard shelving for archiving tree-ring specimens



## More Aurora Storage Solutions

Times-2 Collections Cabinet

Certified Business Services, Inc.  
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Store records, artifacts, samples, and tools in this double sided rotating cabinet.





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# DENDROCHRONOLOGIA

Volume 31 No. 1 · 2013  
ISSN 1125-7865

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)  
SciVerse ScienceDirect

Contents



ISSN 1125-7865 · Dendrochronologia  
31(2013)1 · pp. 1-XXX

Volume 31  
No. 1  
2013

# DENDROCHRONOLOGIA

An Interdisciplinary Journal of Tree-Ring Science

Table of Contents also available via e-mail by free-of-charge ToC Alert Service.  
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Abstracted/Indexed in  
AATA Online; Abstracts of International Conservation Literature; Bibliography of Dendrochronology; BIOSIS; CAB Abstracts; Cambridge Scientific Abstracts; Current Contents/Agricultural Biological & Environmental Sciences; Elsevier BIOBASE; Elsevier GEOBASE; EM Biology; GeoRef; Getty Conservation Institute Project Bibliographies; NISC - National Information Services Corporation; PASCAL; Science Citation Index Expanded; SCOPUS®

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DENDROCHRONOLOGIA Volume 31 · No. 1 · 2013

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