



UMEÅ UNIVERSITY

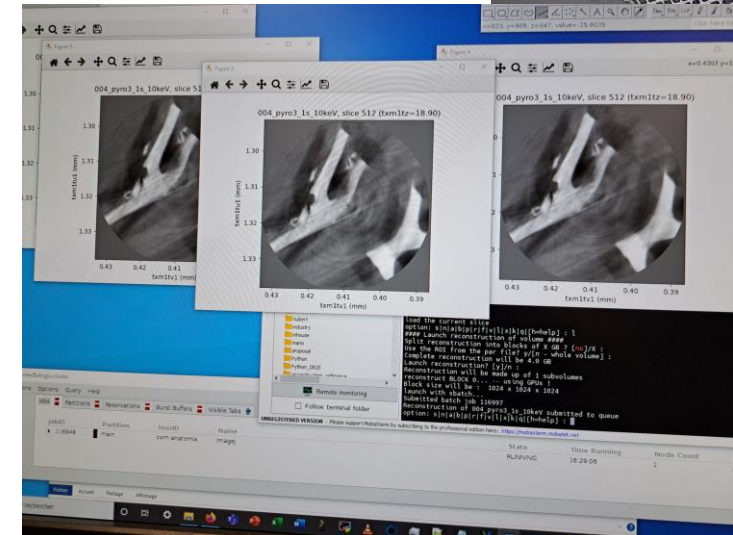
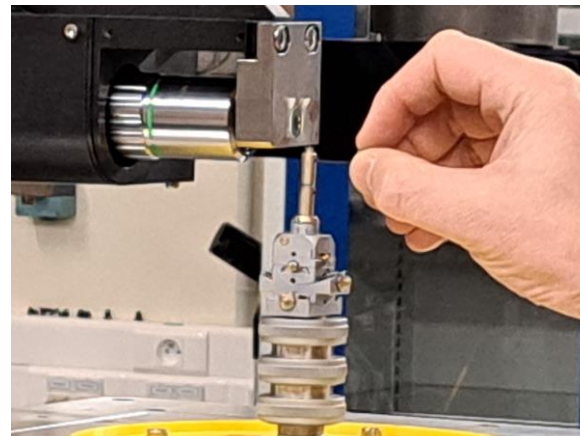
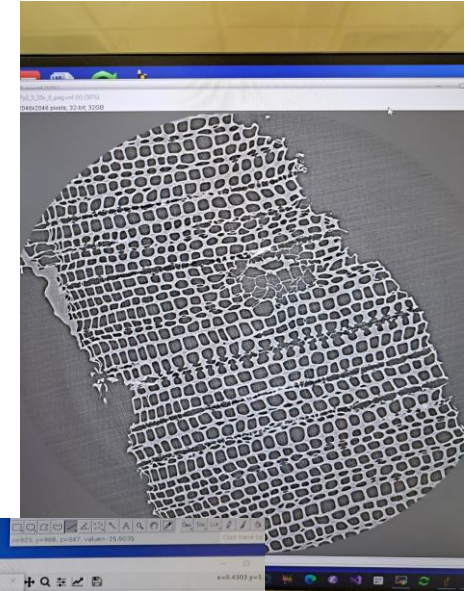
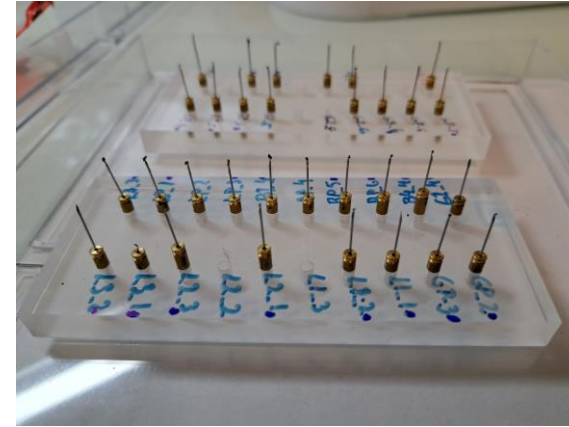
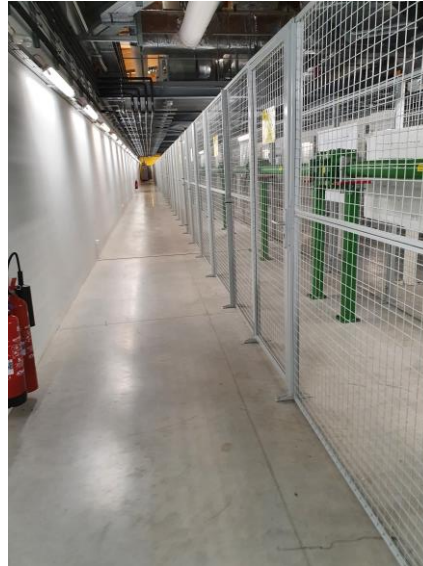
Biochar characterization using state-of-the-art techniques

Anna Strandberg

2023-06-12

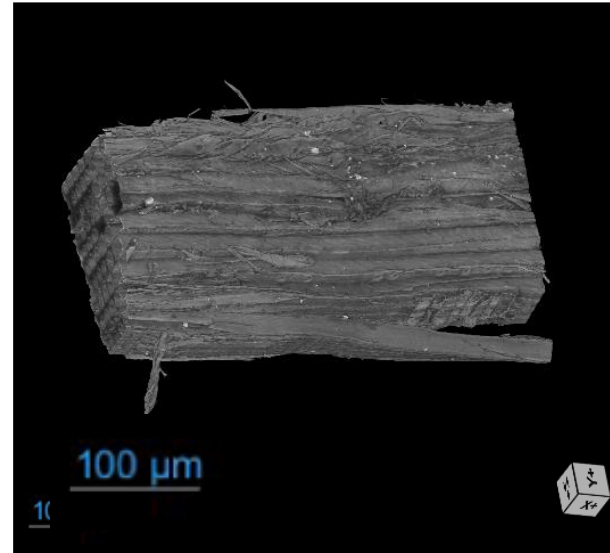
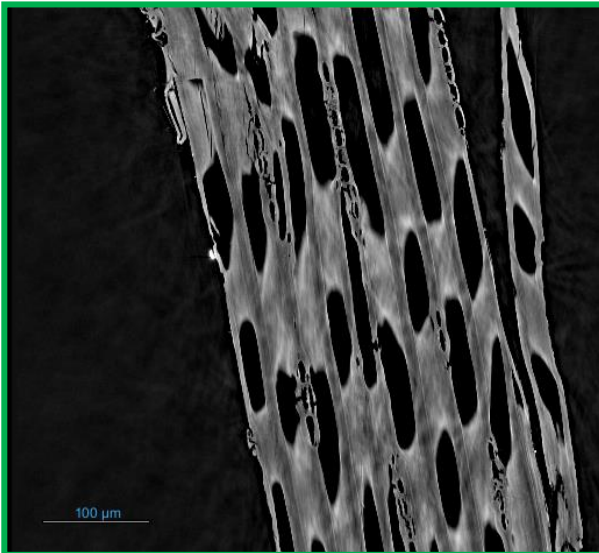
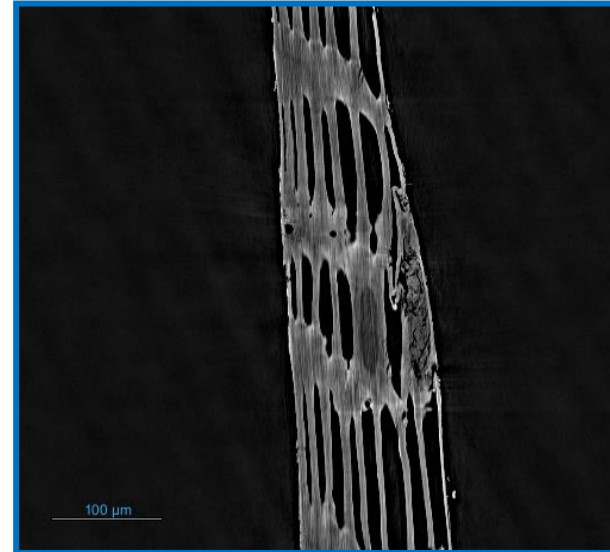
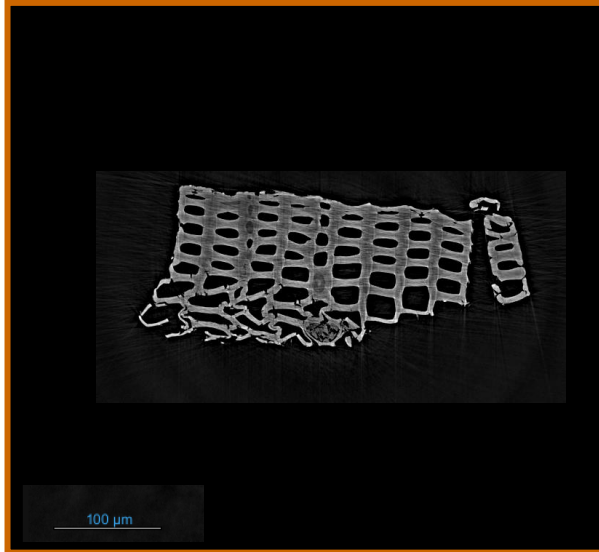
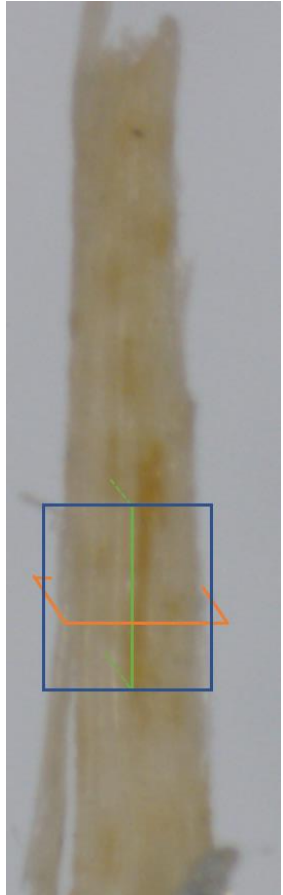
Thermochemical Energy Conversion Laboratory, Department of Applied Physics and Electronics
Umeå University

Micro- and nano- tomography at beamline Anatomix of synchrotron SOLEIL, France



PRELIMINARY RESULTS

PINE RAW MATERIAL

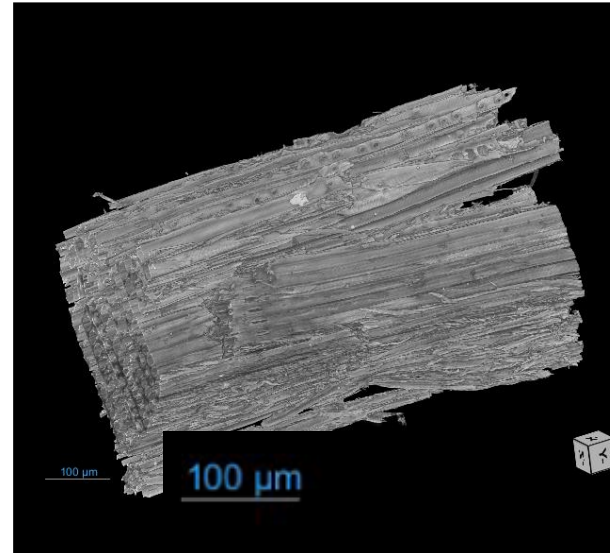
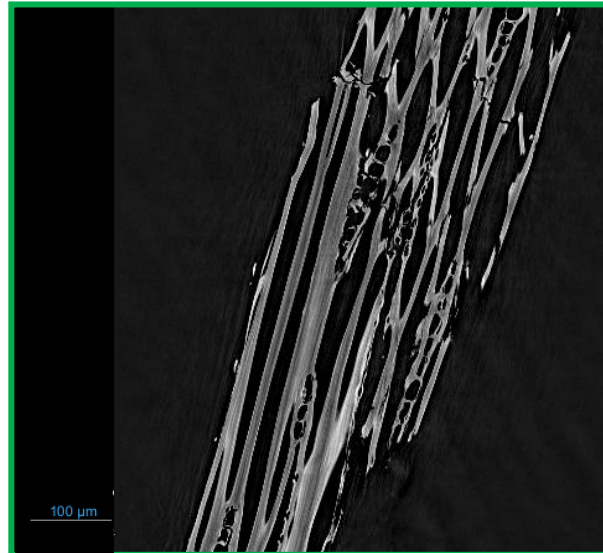
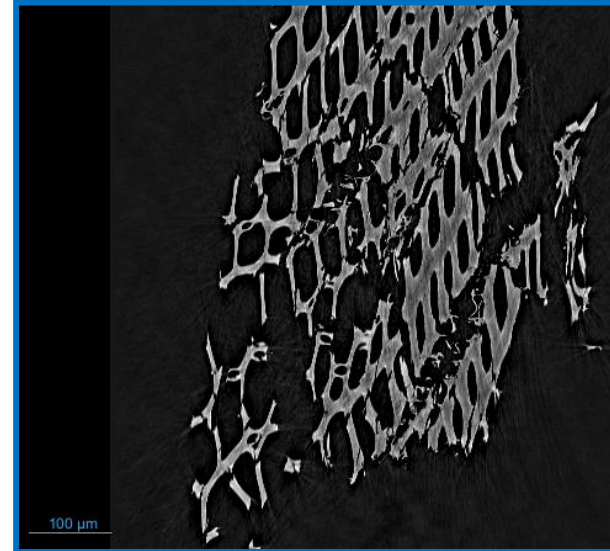
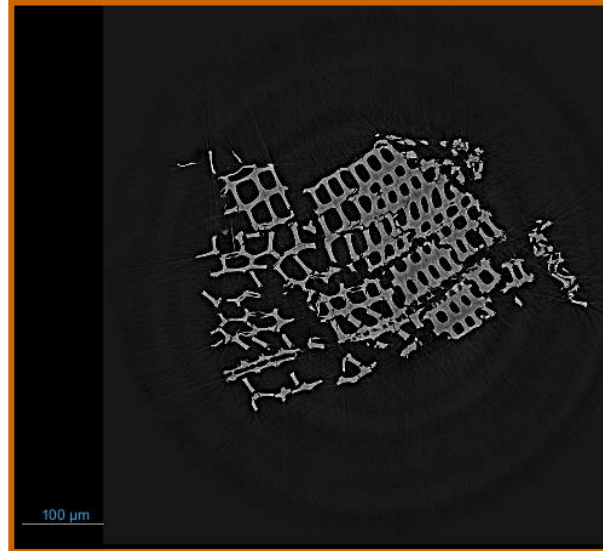
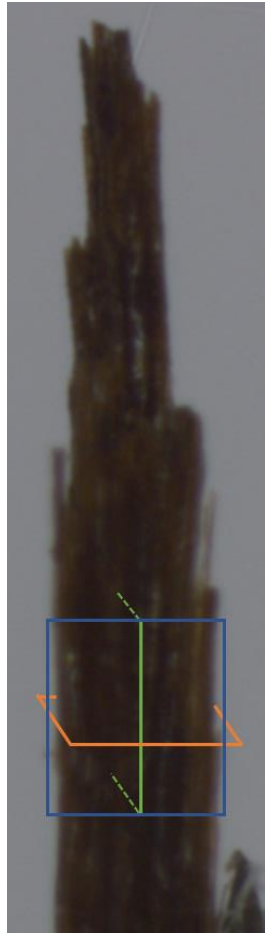


Micro-tomography
at beamline
Anatomix of
synchrotron
SOLEIL, France

Resolution 0.32 μm

PRELIMINARY RESULTS

PINE TORREFIED AT 315°C, 6 min

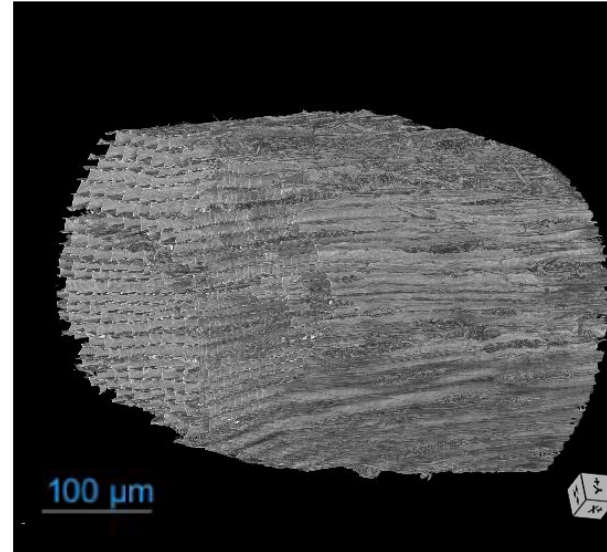
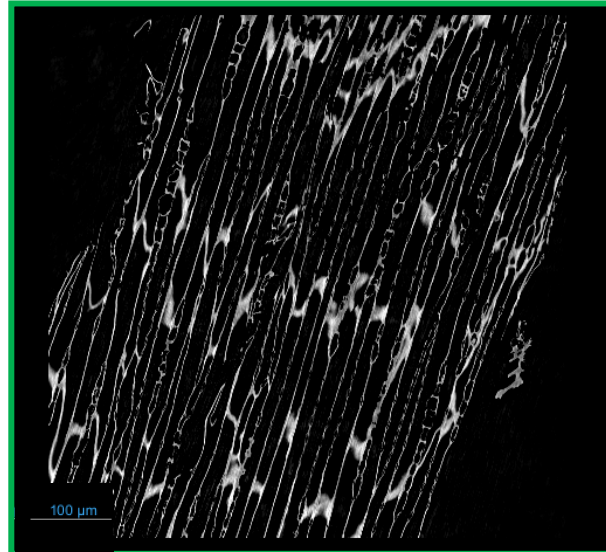
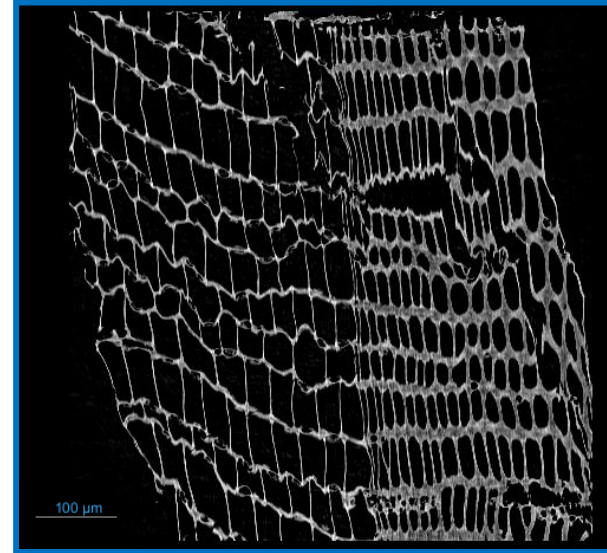
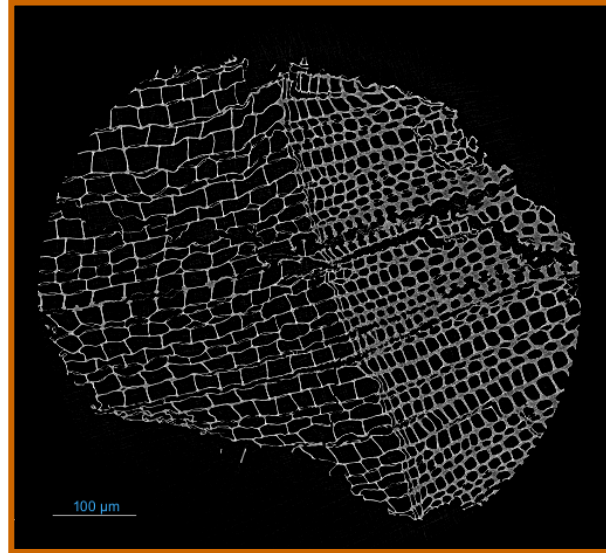
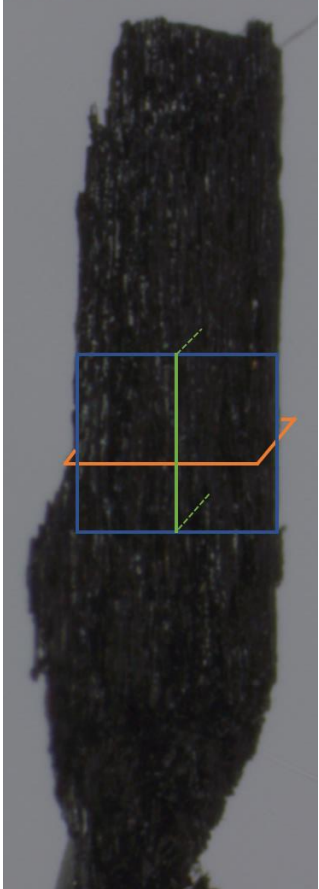


Micro-tomography
at beamline
Anatomix of
synchrotron
SOLEIL, France

Resolution 0.32 μm

PRELIMINARY RESULTS

PINE PYROLYSED AT 350°C



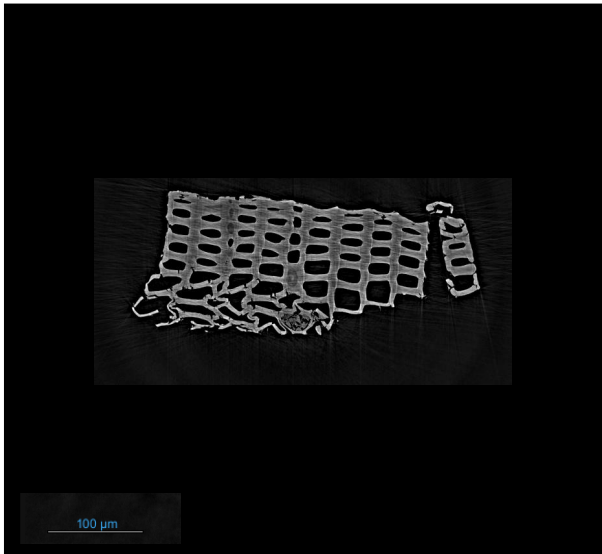
Micro-tomography
at beamline
Anatomix of
synchrotron
SOLEIL, France

Resolution 0.32 μm

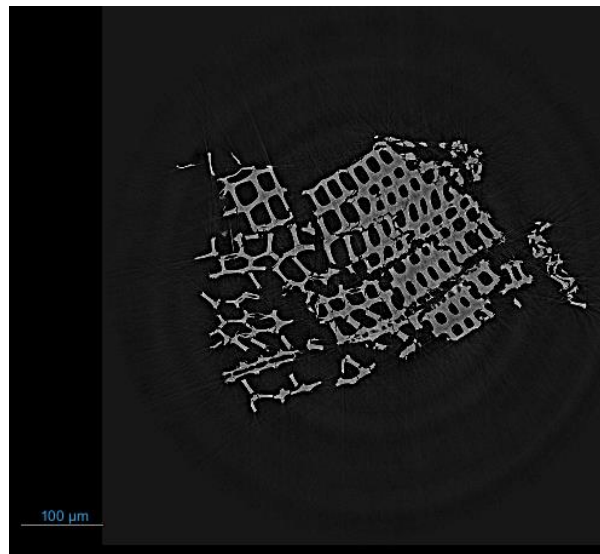
PRELIMINARY RESULTS

Micro-tomography
at beamline
Anatomix of
synchrotron
SOLEIL, France

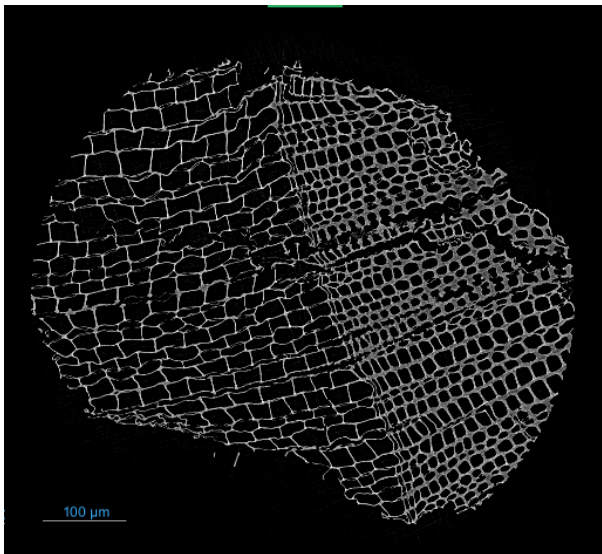
Resolution 0.32 μm



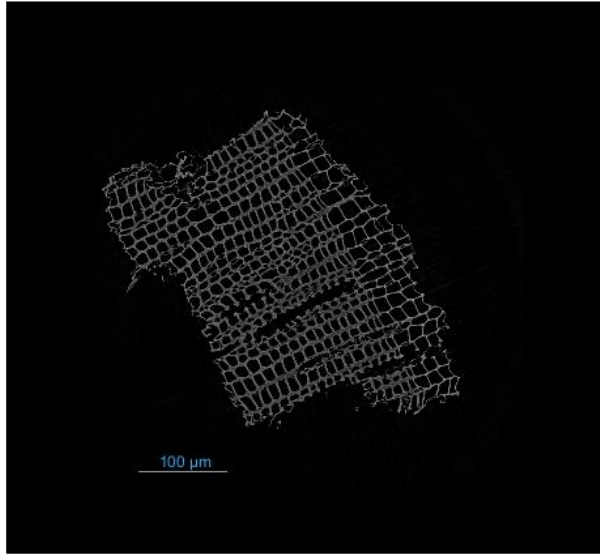
Pine raw material



Pine torrefied at 315°C, 6 min

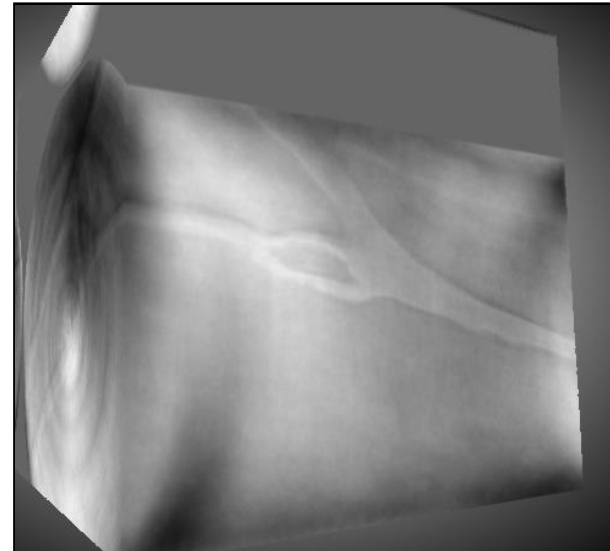
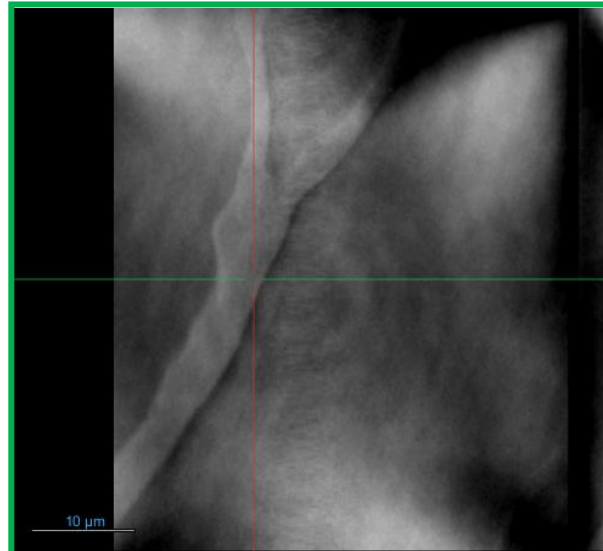
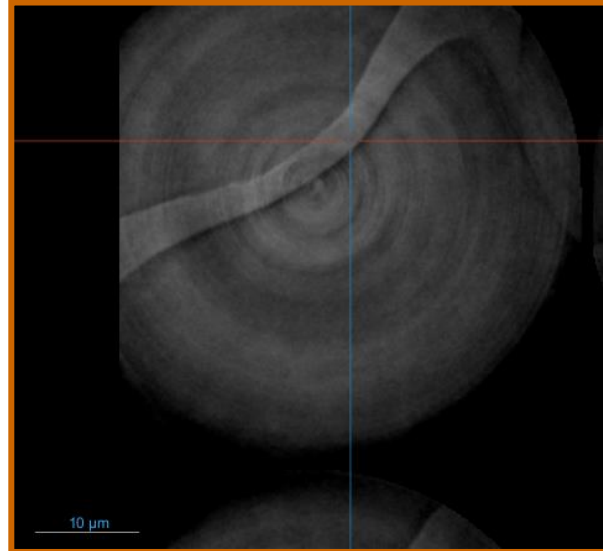
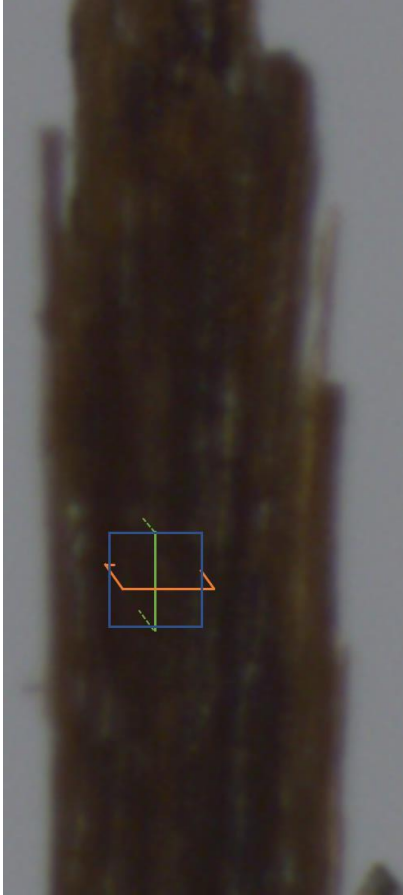


Pine pyrolysed at 350°C



Pine pyrolysed at 400°C

PRELIMINARY RESULTS NANO-TOMOGRAPHY PINE TORREFIED AT 315°C, 6 min



Nano-tomography
at beamline
Anatomix of
synchrotron
SOLEIL, France

Resolution 0.13 µm