



Evaluation of the stage of degradation of aged Oak wood (*Quercus aegilops* L.) originating from the old Meteora monasteries

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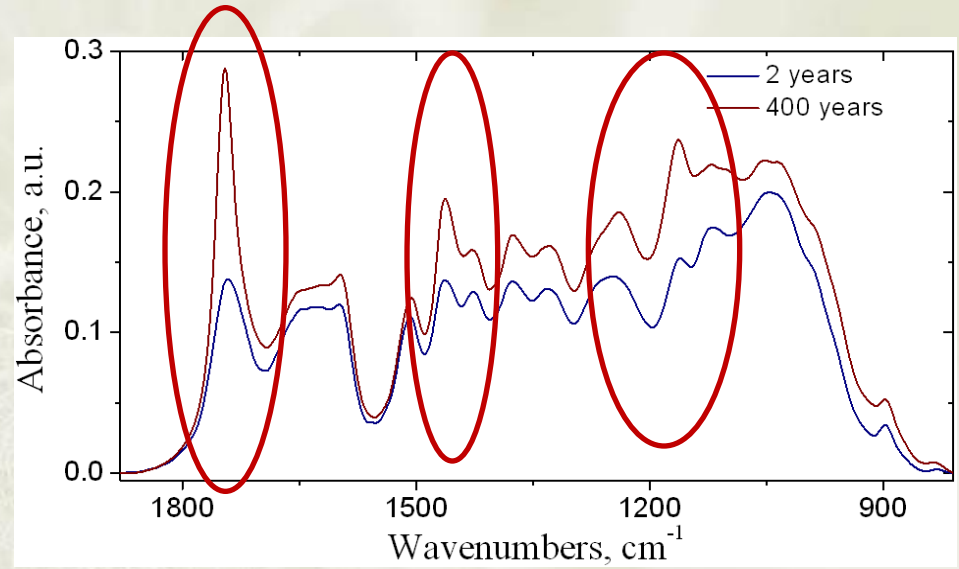
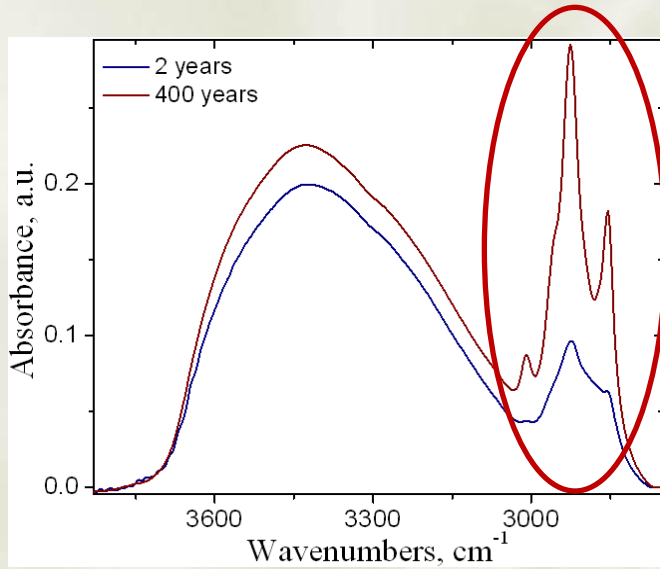
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Aim

- ✓ Evaluation of the stage of degradation of aged Oak wood (*Quercus aegilops* L.) originating from the old Meteora monasteries
- ✓ To identify what type of degradation occurs and its impact on the wood structure

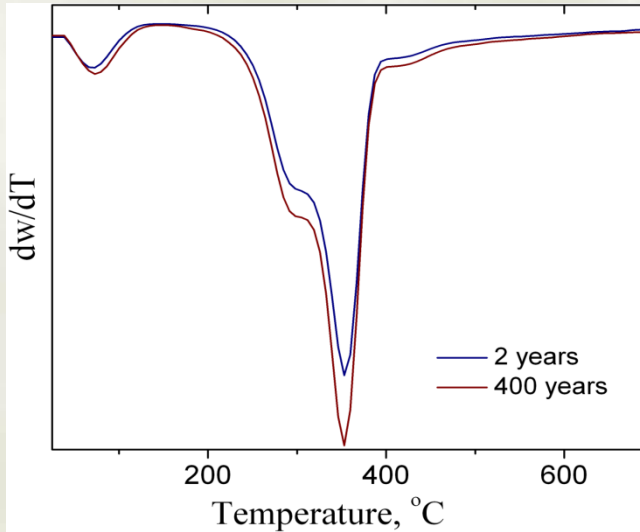
FT-IR spectroscopy



-intensity increases of *the CH* – indicating modifications in wood component structures

- increases of *the C=O, C-O, C-H, C-O-C, and C-O* in carbohydrates and lignin – indicating the $\text{C}\alpha\text{-C}\beta$ and $\beta\text{-O-4}$ bonds between side chains and aromatic rings of the lignin and carbohydrate linkages cleavage with the formation of oxidized structures

Thermogravimetry



	Non-aged	400 years
$T_{mI}, ^\circ\text{C}$	69.4	73.4
w%	4.9	5.0
$T_{sh}, ^\circ\text{C}$	288.1	289.7
$T_{mII}, ^\circ\text{C}$	350.5	346.8
w%	72.2	76.9

- shifting to higher degrees of the temperature corresponding to first step and to lower degrees of the temperature corresponding to second step
- the mass loss increase for the old wood