

## Use of waste wood biomass as a sustainable precursor for activated carbon production and application

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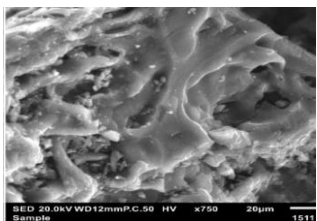
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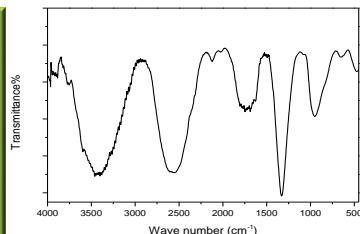
### Introduction

The adsorption of Dyes onto activated carbon was found to mainly depend on porosity and surface Chemistry of carbons. This work aims to study the feasibility of activated carbon (AC) prepared from Olive waste wood for the removal of Methyl Orange (MO) from aqueous solution.

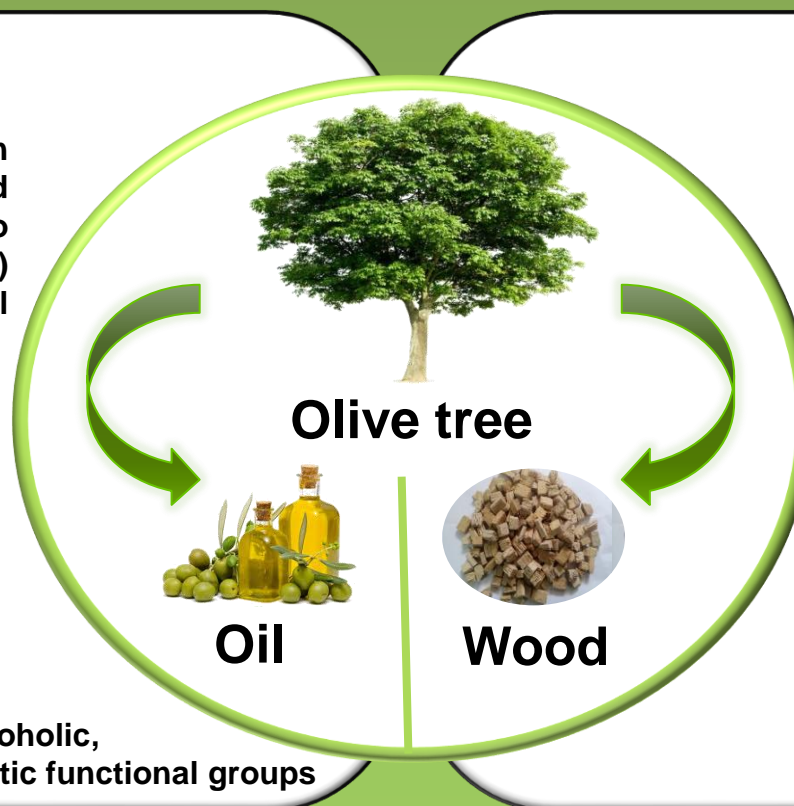
### Characterization of AC



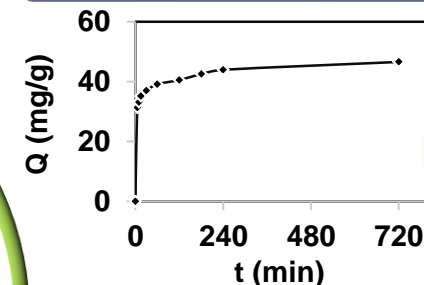
**SEM:** obtained carbon has a highly porous structure



**FTIR:** Presence of alcoholic, carboxylic and aromatic functional groups



### Study Of MO Adsorption



- 240 min to reach a saturation equilibrium
- Follows the pseudo-second-order model kinetics.

Langmuir	
$Q_m$ (mg.g <sup>-1</sup> )	122.54
$K_L$ (L.g <sup>-1</sup> )	0.0178
$R^2$	0.9745
Freundlich	
1/n	1.025
$K_f$ (L.g <sup>-1</sup> )	17.656
$R^2$	0.789

The fitness of the Langmuir model to the adsorption process points that Methyl orange was adsorbed on specific monolayer onto the activated carbon

### Conclusion

The obtained results show clearly that the use of this raw material has important advantages, not only in terms of agricultural waste valorization but also in regard to decrease the Methyl Orange concentration in wastewater.