

Finally in ACs produced through the activation at 900 °C the separate crystallized phase was observed. Most probably this phenomenon can be attributed to the initial stage of graphitization of carbon material.

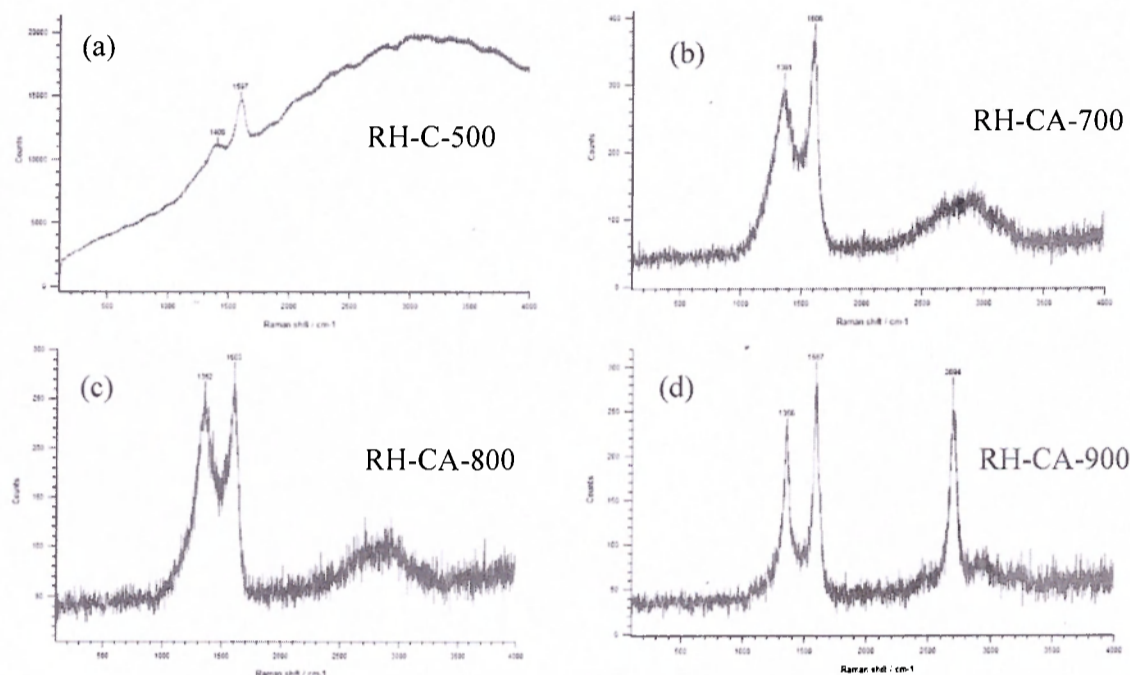


Figure 1. Raman shifts for the RH based carbons: (a) RH carbonized at 500 °C; (b) Activated at 700 °C; (c) Activated at 800 °C; Activated at 900 °C.

From other hand, our present study revealed that when the RH is used in a powdered form the overall specific surface area became enhanced in the range of 35-55%, which means that one of the most important factors is the control of the size of precursor particles subjected to impregnation or direct activation.

#### Conclusion

The advanced low cost activated carbons were prepared on the basis of rice husk by using potassium hydroxide as activating agent. Influence of activation temperature on the porosity development and formation of new crystallized phase in resulting carbons have been shown. It is revealed that the preliminary grinding and leaching of the RH is crucially important to increase the specific surface area of activated carbons. Resulting carbons were implemented to realize carbon/carbon symmetric capacitors using 1 mol L<sup>-1</sup> Li<sub>2</sub>SO<sub>4</sub>. Herein estimated capacitance values were up to 275 F g<sup>-1</sup> which is much higher than of most commercially available activated carbons such as for DLC Supra 30 from Norit tested under similar conditions.

#### References

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