Supporting information for:

**Preparation of activated carbon from *Dipterocarpus alatus* fruit and its application for**

**methylene blue adsorption**

Chantakorn Patawat,[a] Ketsara Silakatea,[a] Somchai Chuan-Udom,[b] Nontipa Supanchaiyamat,[c]

Andrew J. Hunt,[c] and Yuvarat Ngernyen[*a]

*[a] Biomass & Bioenergy Research Laboratory, Department of Chemical Engineering, Faculty of*

*Engineering, Khon Kaen University, Khon Kaen, 40002, Thailand. E-mail:nyuvarat@kku.ac.th*

*[b] Department of Agricultural Engineering, Faculty of Engineering, Khon Kaen University, Khon*

*Kaen, 40002, Thailand*

*[c] Materials Chemistry Research Center, Department of Chemistry and Center of Excellence for*
*Innovation in Chemistry, Faculty of Science, Khon Kaen University, Khon Kaen, 40002,*
*Thailand*
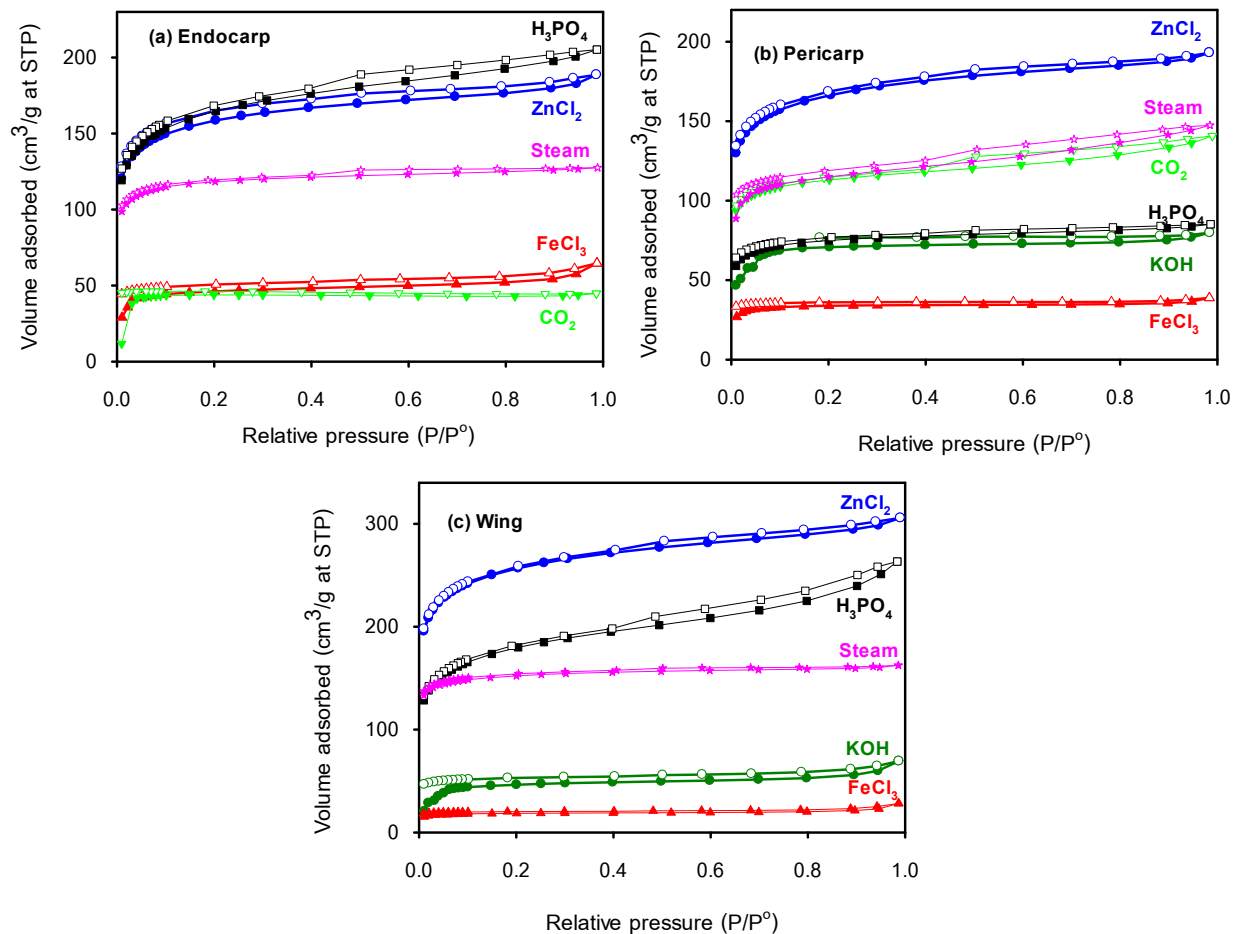
**Fig. S1** N$_2$ adsorption (filled symbols) and desorption (empty symbols) isotherms for activated carbons produced from each part of DF.
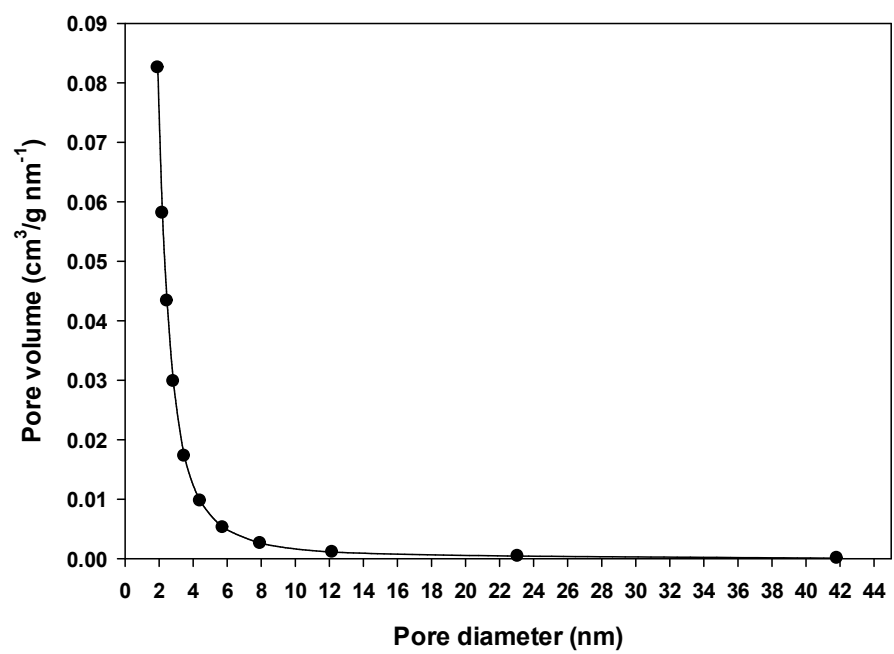
**Fig. S2** Pore size distribution of $ZnCl_2$ activated carbon.

**Table S1** Yield and porous structure parameters of DF activated carbons prepared by various activating agents

| Sample | Yield (wt.%) | $S_{BET}$ (m² g⁻¹) | $V$mic (cm³ g⁻¹) | $V$meso (cm³ g⁻¹) | $V_T$ (cm³ g⁻¹) | $D_P$ (nm) |
|---|---|---|---|---|---|---|
| **Endocarp** | | | | | | |
| ZnCl₂ | 31 | 517 | 0.161 (55%) | 0.131 (45%) | 0.292 | 2.26 |
| FeCl₃ | 48 | 151 | 0.054 (54%) | 0.046 (46%) | 0.100 | 2.66 |
| H₃PO₄ | 34 | 540 | 0.149 (47%) | 0.168 (53%) | 0.317 | 2.35 |
| KOH | 15 | 146 | 0.044 (47%) | 0.049 (53%) | 0.093 | 2.54 |
| CO₂ | 44 | 132 | 0.064 (93%) | 0.005 (7%) | 0.069 | 2.09 |
| Steam | 40 | 379 | 0.150 (76%) | 0.047 (24%) | 0.197 | 2.08 |
| **Pericarp** | | | | | | |
| ZnCl₂ | 30 | 541 | 0.172 (58%) | 0.127 (42%) | 0.299 | 2.21 |
| FeCl₃ | 41 | 108 | 0.045 (75%) | 0.015 (25%) | 0.060 | 2.23 |
| H₃PO₄ | 33 | 243 | 0.087 (66%) | 0.045 (34%) | 0.132 | 2.17 |
| KOH | 20 | 229 | 0.088 (71%) | 0.035 (29%) | 0.123 | 2.16 |
| CO₂ | 42 | 365 | 0.134 (63%) | 0.078 (37%) | 0.212 | 2.38 |
| Steam | 39 | 375 | 0.132 (57%) | 0.096 (34%) | 0.228 | 2.43 |
| **Wing** | | | | | | |
| ZnCl₂ | 32 | 843 | 0.256 (54%) | 0.217 (46%) | 0.473 | 2.24 |
| FeCl₃ | 42 | 60 | 0.024 (54%) | 0.020 (46%) | 0.044 | 2.90 |
| H₃PO₄ | 30 | 597 | 0.145 (35%) | 0.262 (65%) | 0.407 | 2.73 |
| KOH | 15 | 154 | 0.048 (45%) | 0.059 (55%) | 0.107 | 2.79 |
| CO₂ | 50 | 92 | 0.037 (78%) | 0.010 (22%) | 0.047 | 2.05 |
| Steam | 35 | 491 | 0.198 (79%) | 0.053 (21%) | 0.251 | 2.05 |