Electronic Supplementary Material (ESI) for RSC Advances

Degradation of Aqueous Phenol Using Activated Carbons as Green and Effective Catalysts for Generation of Reactive Radicals

Edy Saputra[1,2], *Syaifullah Muhammad*[1,3], *Hongqi Sun*[1], *Shaobin Wang*[1,]*

[1]*Department of Chemical Engineering, Curtin University, GPO Box U1987, Perth, WA 6845, Australia*

[2]*Department of Chemical Engineering, Riau University, Pekanbaru 28293, Indonesia*

[3]*Department of Chemical Engineering, Syiah Kuala University, Banda Aceh, Indonesia*

*Correspondence author. Email: Shaobin.wang@curtin.edu.au

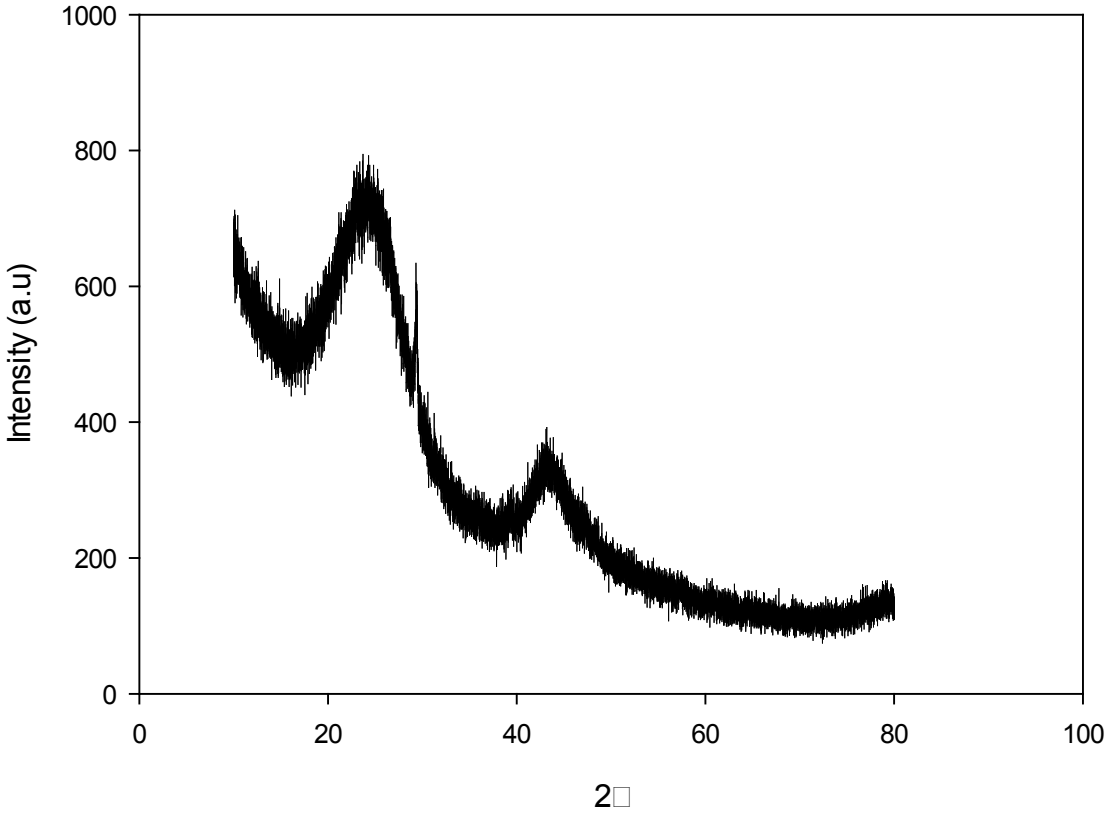

Fig.S1. XRD pattern of powder activated carbon.

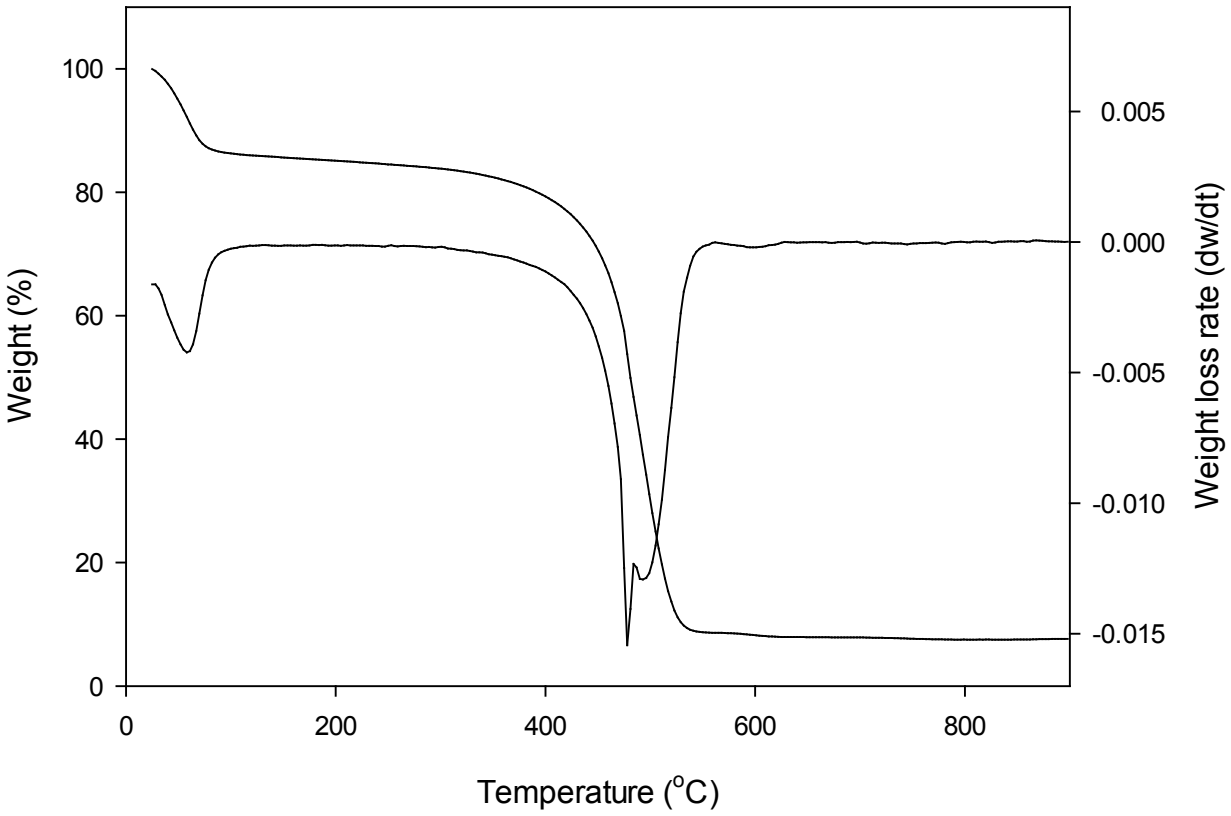

Fig.S2. TGA analysis of powder activated carbon.

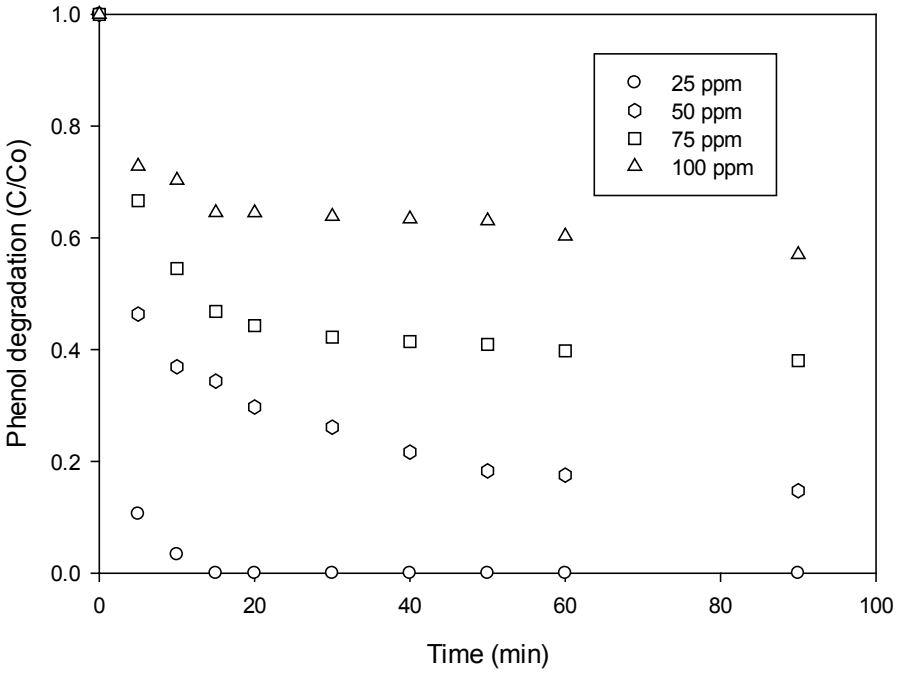

Fig. S3 Effect of phenol concentration on phenol removal. Reaction condition: catalyst = 0.2 g/L, PMS = 6.5 mmol/L, and T = 25 ^{o}C.

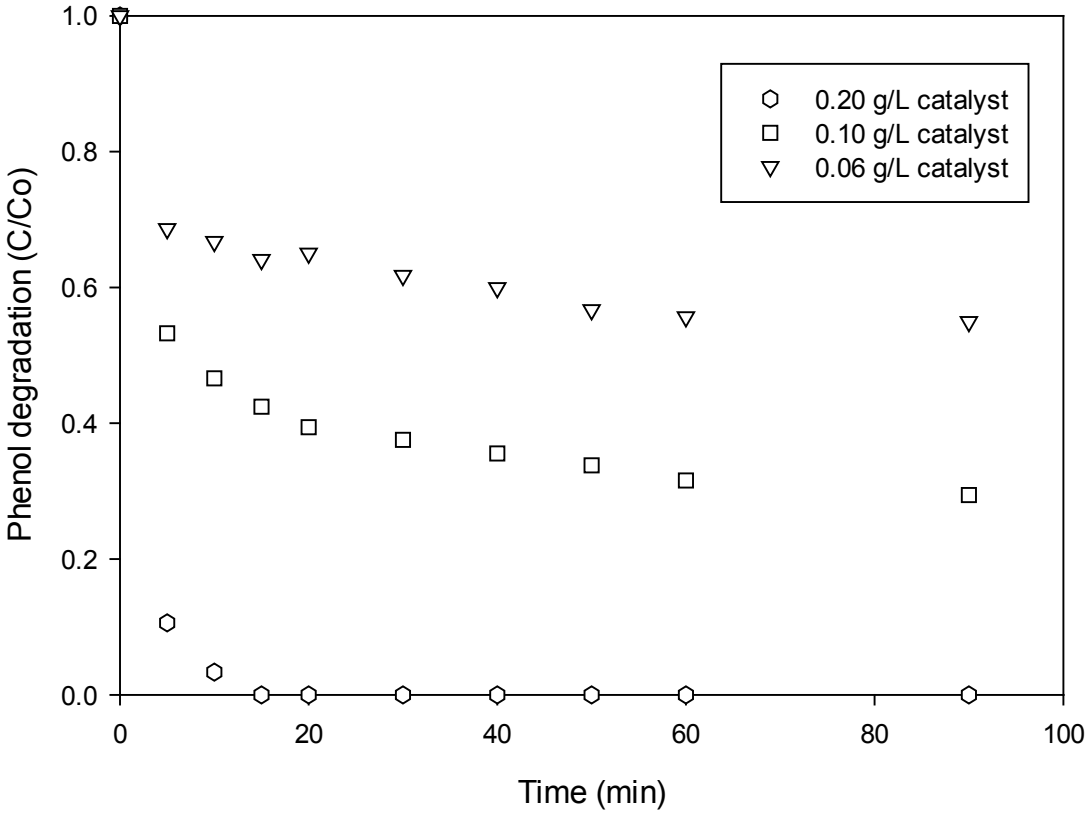

Fig. S4 Effect of catalyst loading on phenol removal. Reaction condition: [Phenol] = 25 ppm, PMS = 6.5 mmol/L, and T = 25 ^{o}C.

Table S1. Rate constants at different concentrations of PMS.

Initial PMS concentration (mmol/L)	Rate constant (min^{-1})	R^2
6.5	0.394	0.967
5.2	0.266	0.991
2.6	0.192	0.952
1.3	0.141	0.982