Enhancing stability and efficiency of oxygen reduction reaction in polymer electrolyte fuel cells with high surface area mesoporous carbon synthesized from spent mushroom compost

P. Dhanasekaran^a, Avanish Shukla^a, K. Navaneetha Krishna^b, Ibadahunshisha Rongrin^c,

S. Vinod Selvaganesh^d, D. Kalpana^{a,*} and S. D. Bhat^{a,*}

^a CSIR-Central Electrochemical Research Institute (CECRI), CSIR-Madras Complex,

Chennai 600 113, Tamil Nadu, India.

^bSt.Joseph's College of Engineering, Chennai- 600119, Tamil Nadu, India.

Karunya Institute of Science and Technology, Coimbatore-641114, Tamil Nadu, India.

^dDepartment of Chemical Engineering, IIT-Madras, Chennai 600 036, Tamil Nadu, India.

 Table 1S. Approximate cost of mesoporous carbon synthesized from spent mushroom compost.

Parameter	Spent mushroom compost derived carbon (R & D work)	Spent mushroom compost derived carbon (for large scale)	Vulcan XC 72R
Spent mushroom procured (1 kg)	Free of cost	Rs. ~4-5 (including transport charge)	-
KOH and activation cost	Rs ~7-8	Rs. ~6-7 (including water)	-
Heat treatment cost	Rs. ~100-120	Rs ~60-80 (only treatment and also depends on furnace size)	-
Other (washing and man power)	Free of cost	Depends (Rs ~100- 200) for 1 Kg	-
Others (Instrumentation, management and etc)	Free of cost	25 %	-
Profit		50 %	
Total cost		~ 6 USD for 10 g	10 USD for 10 g