

Electronic supplementary information:

***Design of selective solid acid catalyst for the optimization of glucose production from Oryza Sativa straw***

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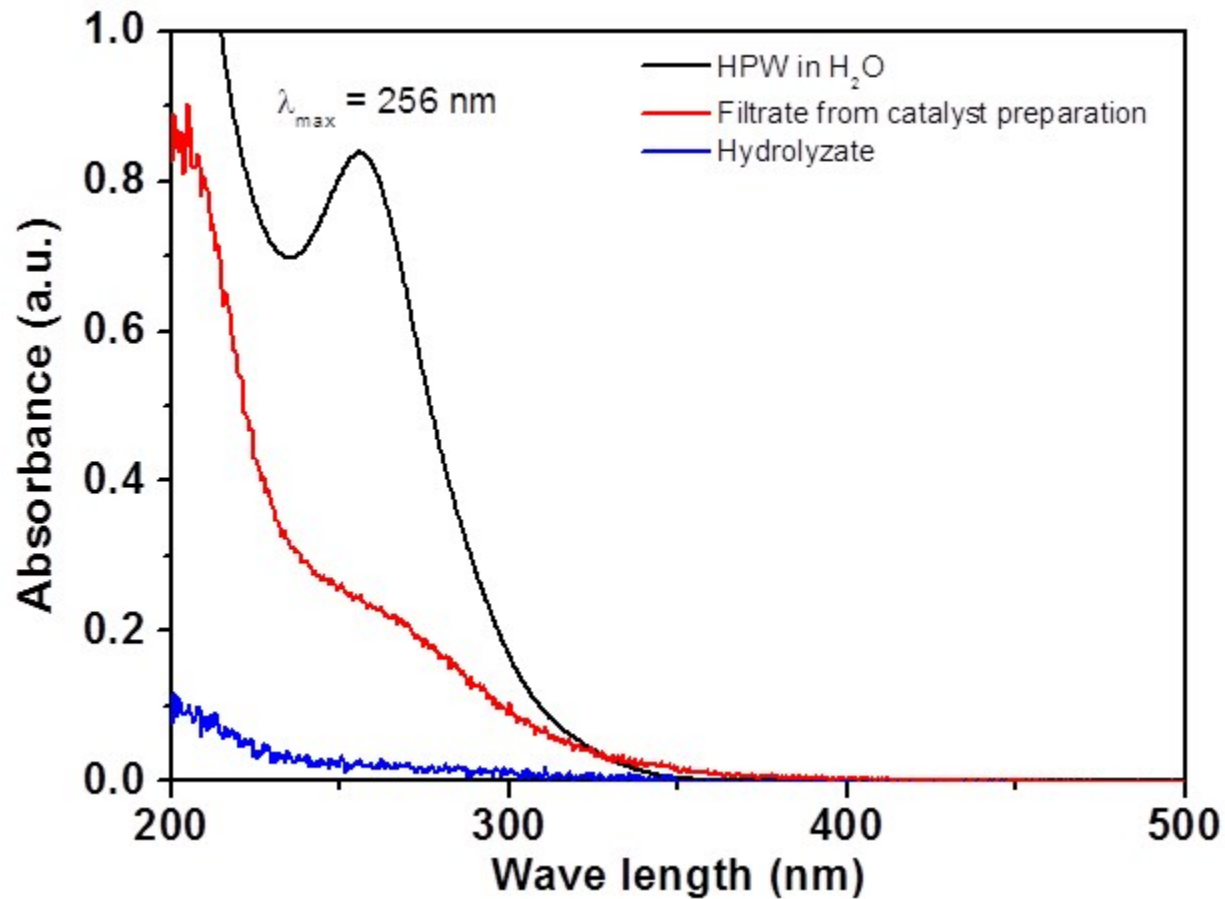
**Table S1.** Composition of untreated and pretreated biomass (rice straw) <sup>a</sup>

Description	S.R. <sup>b</sup>	Delignification	Solid		Liquid		Total	
			Glucan	Xylan	Glucan	Xylan	Glucan	Xylan
	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
Untreated	-	-	-	-	-	-	30.6	14.4
SAA <sup>c</sup>	62.0 ±1.8	76.0 ±1.8	30.3 ±0.0	13.2 ± 0.2	-	-	30.3 ±0.0	13.2 ± 0.2
SAA-hot water	74.9 ±2.0	78.8 ±1.7	30.8 ±0.1	6.5 ±0.1	2.9 ±0.7	3.2 ±0.4	33.7 ±0.4	9.7 ±0.5
SAA-H <sub>2</sub> SO <sub>4</sub>	49.3 ±1.9	85.4 ±0.8	21.6 ±0.0	3.5 ±1.2	3.0 ±0.5	3.8 ±0.9	24.6 ±0.3	7.3 ±0.4

<sup>a</sup>All sugar and lignin content based on the oven-dry untreated biomass. Values are expressed as mean and standard deviation (n=2).

<sup>b</sup>S.R.: solid remaining after reaction.

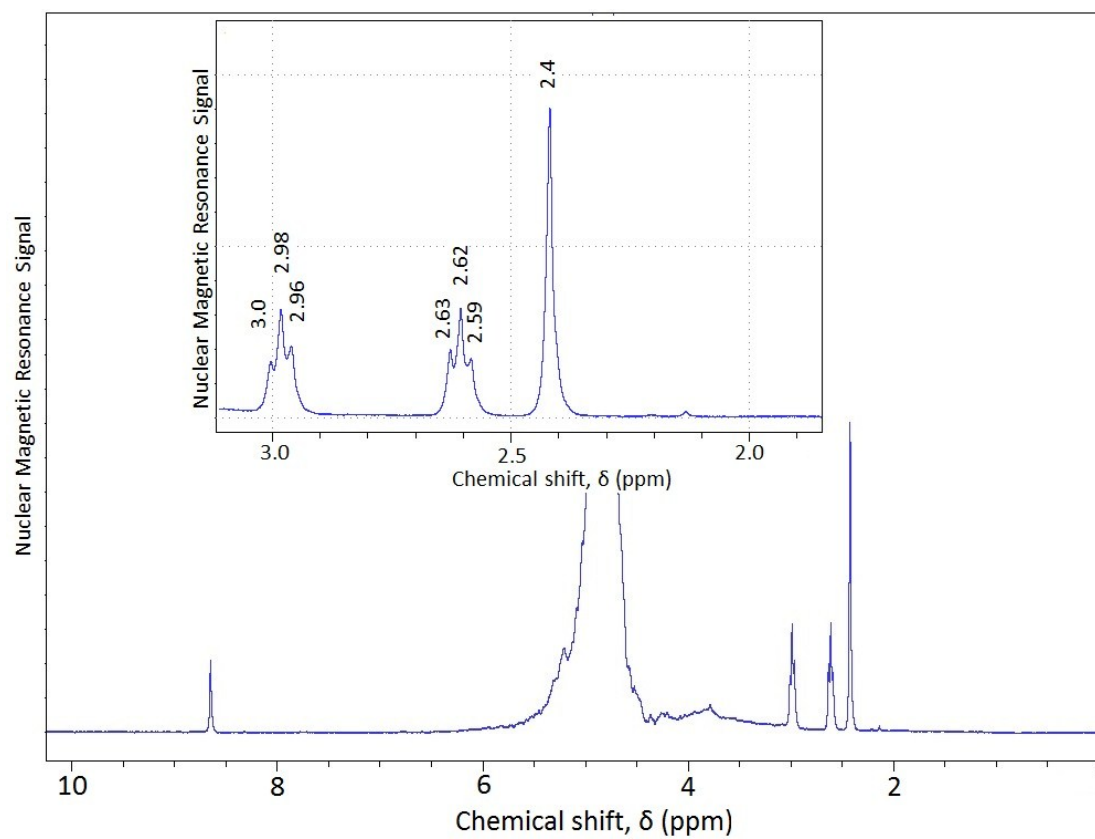
<sup>c</sup>SAA: soaking in aqueous ammonia.



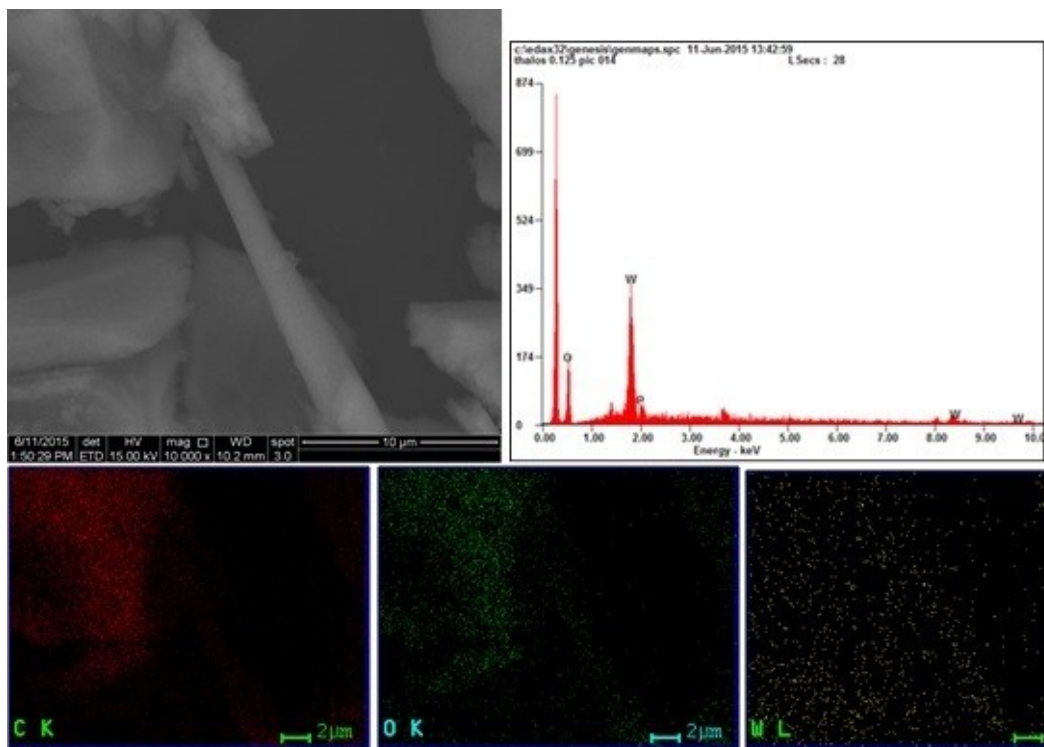
**Fig. S1.** UV-Vis spectra of aq. HPW, filtrate collected during catalyst preparation via impregnation method and the hydrolyzate obtained from rice straw hydrolysis under microwave irradiation (100 °C, 5 min.).



**Fig. S2.** Digital photograph of the modified domestic microwave oven (MDMWO) with stirring facility used for the hydrolysis of pretreated rice straw



**Fig. S3.** <sup>1</sup>H NMR spectrum of the hydrolyzate from pretreated (aq. NH<sub>3</sub>-H<sub>2</sub>SO<sub>4</sub>) rice straw hydrolyzed in commercial microwave oven (MARS, 5 min., 100 °C, 3 M HCl)



**Fig. S4.** E-SEM, EDAX and the elemental mapping (C, O, W) of ~ 40 wt.% HPW/AC spent catalyst