

Supplementary Material for

Examining chemical and optical properties of aerosols from biomass cooking and their impact on oxidative potential

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Table S1: Characteristics reported from household survey of Dhule district (n=117)

Characteristics		Percentage
<u>Socioeconomic Status</u>		
Age groups	18-40	48.7
	40-60	41
	>60	10.2
Literacy status	Primary	9.4
	High school	48.7
	Intermediate	7.6
	Graduate	0.8
	Post graduate	1.7
Occupational status	Illiterate	31.6
	Currently working	73.5
Nature of Job	Farming	68.6
	Daily wages	31.4
	Salary/Business	0
Duration spent outside for work	< 8 hrs	8.1
	> 8 hrs	91.8
Occupancy (No. of people staying in the house)	1 —2	17.9
	3—4	30.7
	5—9	46.1
	>=10	5.1
<u>Cooking and kitchen related survey</u>		
While cooking kid stays with the women cooking		63.3
Frequency of cooking per day	One	0.85
	Two	91.4
	Three	7.6
Duration of cooking	< 2 Hr	24.7
	> 2 Hr	54.1
	>2.5Hr	11.1
Kitchen type	Indoor with partition	47
	Indoor without partition	39.3
	closed outdoor	0.8
	open air/ outdoor	12.8
Kitchen door/window open while cooking	Open	94.1
Existence of exhaust fan in the kitchen	Present in kitchen	1.9
Chimney/vent	Present in kitchen	50.9
<u>Cooking Stove and fuel related questions</u>		
Primary stove for cooking	Traditional stove	63.2
	Improved stove	0
	LPG	36.7
	Kerosene stove	0
	Electric stove	0
	Sighdi	0
Major season for primary stove usage	All seasons	100
Secondary stove	Present	64.9
Type of secondary stove	Traditional stove	44.7
	Improved stove	0
	LPG	52.6
	Kerosene stove	2.6
Major season for secondary stove usage	Winter	1.3
	Winter/ Rainy	2.6
	All seasons	51.3
Primary fuel used for traditional stove	Others	44.7
	Firewood	47.8
	Crop residue	39.3
	Dung cake	0.8
Secondary fuel* for traditional stove	Others (Mixed fuel)	11.9
	Firewood	30.7
	Crop residue	37.6
	Dung cake	12.8
Primary fuel used for ignition	Others (Mixed fuel)	18.8
	Scrap paper	67.5
	Kerosene	13.6
	Polymeric material	9.4
	Dry leaves & Straw	1.7
	Others	0.8
Secondary fuel used for ignition	None	6.8
	Scrap paper	16.2
	Kerosene	6.8
	Polymeric material	58.9
	Dry leaves & Straw	0.8
	Others	1.7
	None	15.3

*For those homes which use LPG as primary cooking method.

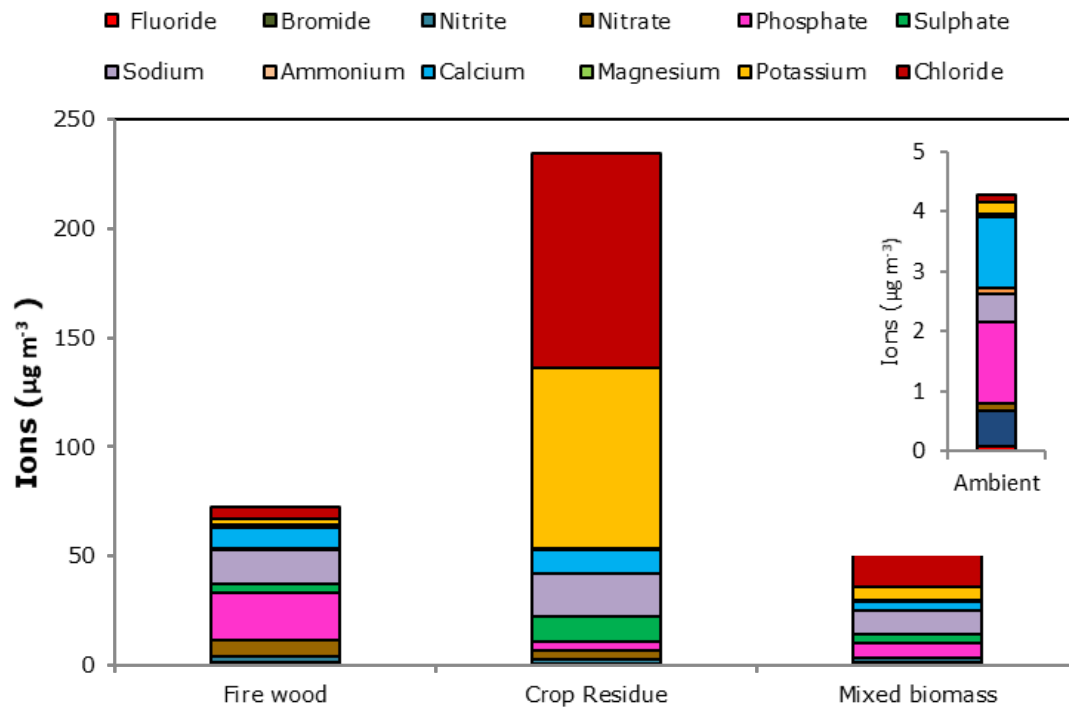


Figure S1: Major ionic species for different biomass cooking fuels and ambient air (n=2 for firewood, mixed biomass and ambient air and n=4 for crop residue)

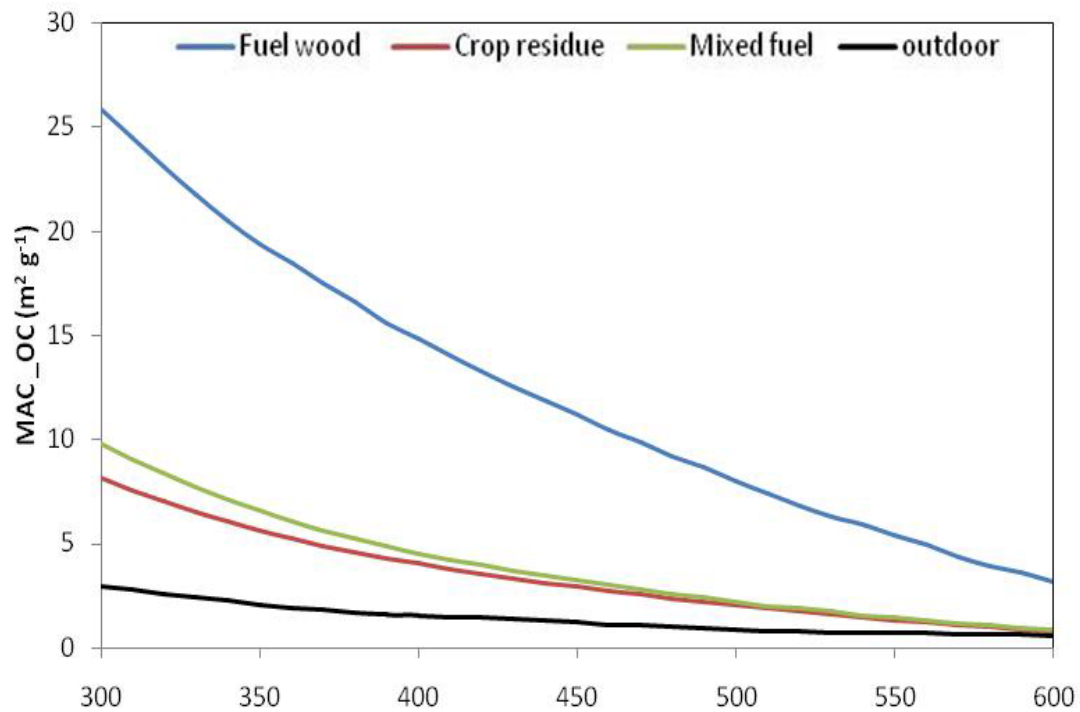


Figure S2: Spectra dependence of the OC-MAC of aerosols emitted from different solid biomass fuel used for cooking

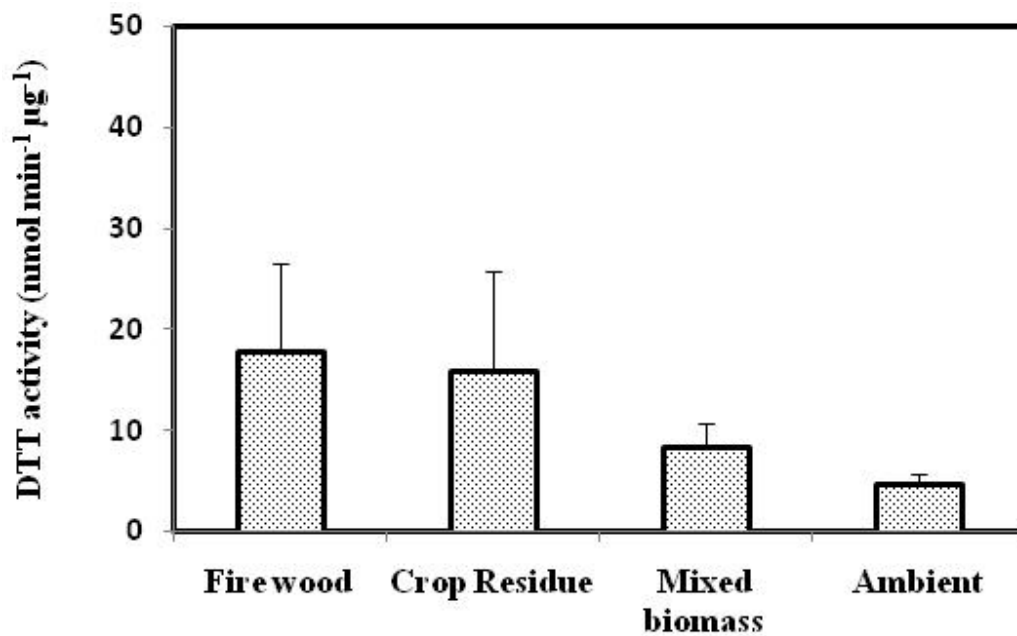


Figure S3: Average oxidative potential (as mass-normalised DTT activity) measured in PM_{2.5} emitted from different biomass cooking fuels and in ambient rural air

Table S2: Limit of Detection (LOD) of DTT assay

Average Rate of consumption of DTT (nmol min ⁻¹)	LOD (3*SD)
0.58±0.07	0.21