

1 Indoor - Outdoor Oxidative Potential of PM<sub>2.5</sub> in  
2 Wintertime Fairbanks, Alaska: Impact of Air  
3 Infiltration and Indoor Activities

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23 **Table S1.** Detailed description of the indoor experiments.

Date	Start time	Stop time	period	Emission type
2022-01-25	2:15:00 PM	5:15:00 PM	Active Emissions	Pellet Stove
2022-01-25	5:15:00 PM	8:15:00 PM	ConcDecay	Pellet Stove
2022-01-28	4:12:00 PM	7:20:00 PM	Active Emissions	Pellet Stove
2022-01-28	7:20:00 PM	9:20:00 PM	ConcDecay	Pellet Stove
2022-01-29	12:03:00 PM	1:00:00 PM	Active Emissions	Cooking <sup>1</sup>
2022-01-29	1:00:00 PM	2:00:00 PM	ConcDecay	Cooking
2022-01-29	3:00:00 PM	3:14:00 PM	Active Emissions	Cooking <sup>2</sup>
2022-01-29	3:14:00 PM	6:14:00 PM	ConcDecay	Cooking
2022-01-30	1:15:00 PM	1:35:00 PM	Active Emissions	Cooking <sup>3</sup>
2022-01-30	1:35:00 PM	3:00:00 PM	ConcDecay	Cooking
2022-01-30	3:00:00 PM	4:15:00 PM	Active Emissions	Cooking <sup>3</sup>
2022-01-30	4:15:00 PM	6:15:00 PM	ConcDecay	Cooking
2022-01-31	3:15:00 PM	6:15:00 PM	Active Emissions	Pellet Stove
2022-01-31	6:15:00 PM	9:15:00 PM	ConcDecay	Pellet Stove
2022-02-03	2:55:00 PM	5:20:00 PM	Active Emissions	Pellet Stove
2022-02-03	5:20:00 PM	8:20:00 PM	ConcDecay	Pellet Stove
2022-02-05	12:12:00 PM	3:12:00 PM	Active Emissions	Pellet Stove
2022-02-05	3:12:00 PM	6:12:00 PM	ConcDecay	Pellet Stove
2022-02-07	10:15:00 AM	1:15:00 PM	Active Emissions	Mixed
2022-02-07	1:15:00 PM	6:30:00 PM	ConcDecay	Mixed
2022-02-08	9:15:00 AM	12:01:00 PM	Active Emissions	Mixed
2022-02-08	12:01:00 PM	4:01:00 PM	ConcDecay	Mixed
2022-02-09	10:15:00 AM	1:01:00 PM	Active Emissions	Mixed
2022-02-09	1:01:00 PM	5:01:00 PM	ConcDecay	Mixed
2022-02-10	11:30:00 AM	2:14:00 PM	Active Emissions	Mixed
2022-02-10	2:14:00 PM	6:14:00 PM	ConcDecay	Mixed
2022-02-11	10:30:00 AM	1:38:00 PM	Active Emissions	Pellet Stove
2022-02-11	1:38:00 PM	5:38:00 PM	ConcDecay	Pellet Stove
2022-02-16	3:00:00 PM	6:07:00 PM	Active Emissions	Mixed
2022-02-16	6:07:00 PM	10:07:00 PM	ConcDecay	Mixed
2022-02-18	1:00:00 PM	3:09:00 PM	Active Emissions	Mixed
2022-02-18	3:09:00 PM	6:30:00 PM	ConcDecay	Mixed
2022-02-18	8:30:00 PM	8:50:00 PM	Active Emissions	Incense
2022-02-18	8:50:00 PM	11:50:00 PM	ConcDecay	Incense
2022-02-21	1:30:00 PM	4:40:00 PM	Active Emissions	Pellet Stove
2022-02-21	4:40:00 PM	7:45:00 PM	ConcDecay	Pellet Stove
2022-02-21	7:45:00 PM	8:30:00 PM	Active Emissions	Incense

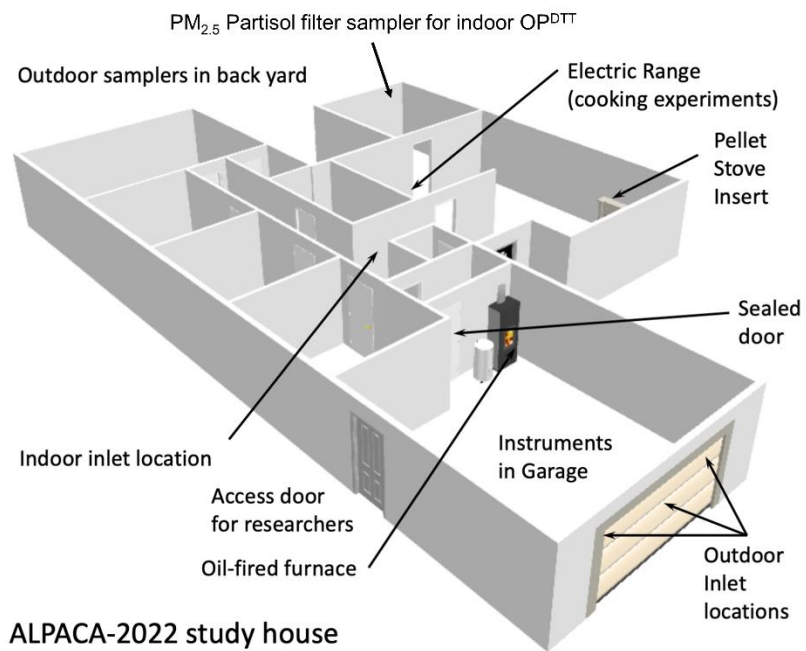
2022-02-21	8:30:00 PM	11:30:00 PM	ConcDecay	Incense
2022-02-22	10:00:00 AM	1:12:00 PM	Active Emissions	Pellet Stove
2022-02-22	1:12:00 PM	4:12:00 PM	ConcDecay	Pellet Stove
2022-02-23	11:30:00 AM	12:20:00 PM	Active Emissions	Incense
2022-02-23	12:20:00 PM	1:30:00 PM	ConcDecay	Incense
2022-02-23	1:30:00 PM	4:44:00 PM	Active Emissions	Pellet Stove
2022-02-23	4:44:00 PM	7:45:00 PM	ConcDecay	Pellet Stove
2022-02-23	8:00:00 PM	8:30:00 PM	Active Emissions	Car (Outdoor Source)
2022-02-24	10:30:00 AM	11:20:00 AM	Active Emissions	Incense
2022-02-24	11:20:00 AM	2:20:00 PM	ConcDecay	Incense

24 <sup>1</sup> Pasta boil and sauce simmer.

25 <sup>2</sup> Oil aerosol generation: add ¼ cup of vegetable oil to the sauté pan and add water to the hot oil.

26 <sup>3</sup> Both Pasta boil and oil aerosol generation.

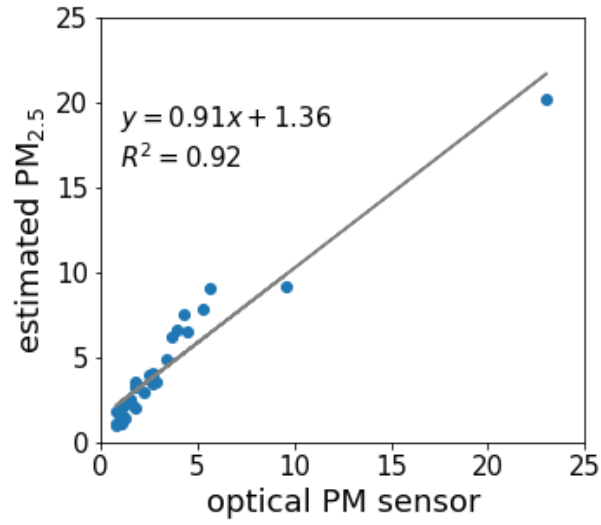
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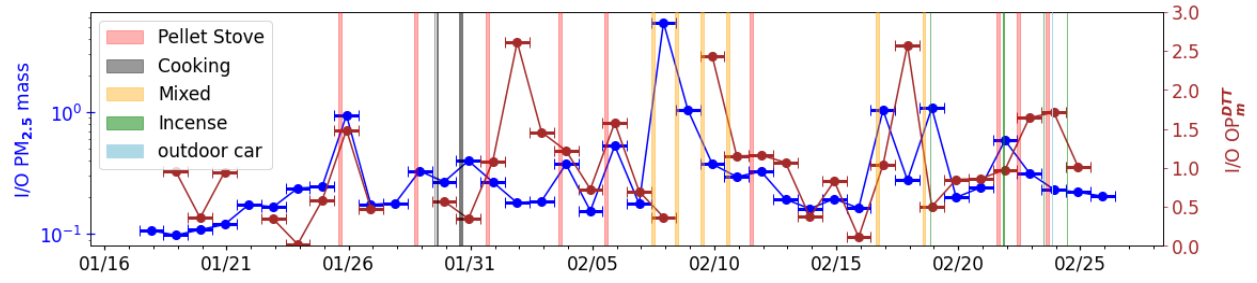
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29 **Figure S1.** A 3-D rendering of the one-story house's plan showing locations of inlets and key

30 indoor sources and inlet locations. The house was in a suburban area of Fairbanks, Alaska.



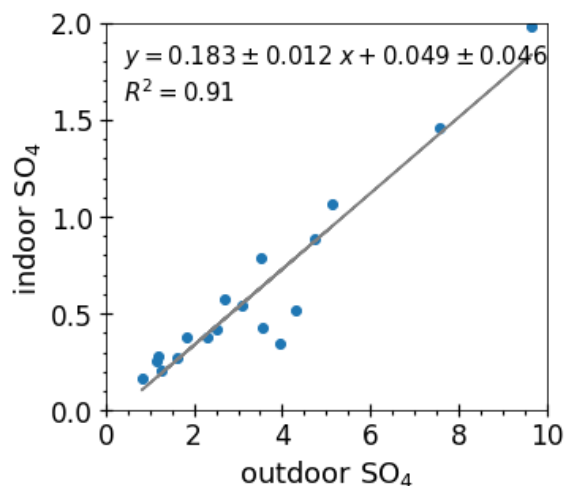
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32 **Figure S2.** Comparison between indoor  $PM_{2.5}$  mass concentration estimated by  $PM_{1+BC}$  and  
33  $PM_{2.5}$  measurement using a low-cost optical PM sensor merged to the filter sampling time,  
34 Orthogonal regression was applied.



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36 **Figure S3.** Time series of indoor-outdoor (I/O) PM<sub>2.5</sub> mass, I/O OP<sub>m</sub><sup>DTT</sup> and the time slot of

37 different experiments.



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39 **Figure S4.** Daily average PM<sub>1</sub> sulfate concentrations measured indoors and outdoors with an  
40 Aerosol Mass Spectrometer (AMS) merged to the filter sampling time, during periods of no indoor  
41 activities (Background and No-experiments). Orthogonal regression was applied. Background  
42 refers to the period at the start of the study prior to any indoor perturbation experiments. No  
43 experiments are days during the study when there was no perturbation experiment, but experiments  
44 had occurred on previous days.