

**Electronic Supplementary Information for:**

**Glass Surface Evolution Following Gas Adsorption and Particle  
Deposition from Indoor Cooking Events as Probed by Micro-  
Spectroscopic Imaging and Characterization**

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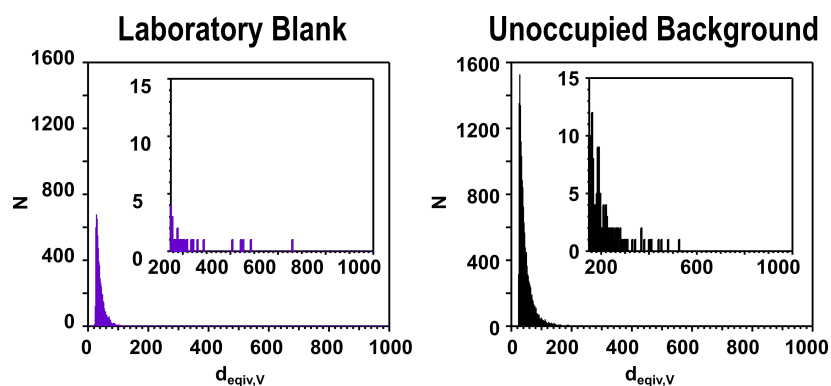
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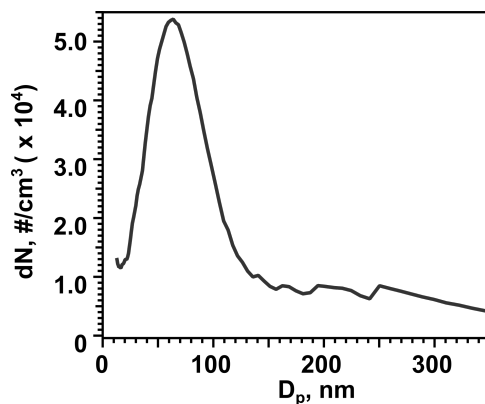
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**Table S1.** Sampling Times (CDT) and Dates for each exposure period.

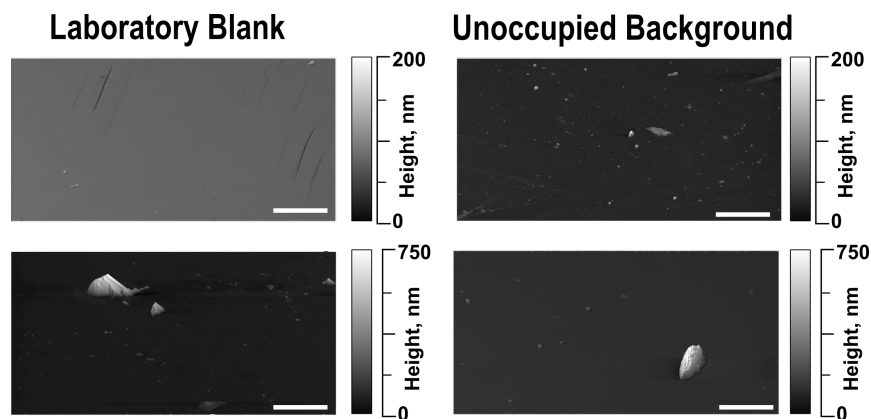
Event	Sampling Start	Sampling End
Unoccupied Background	June 1 (16:30)	June 3 (7:00)
Stir Fry	June 5 (08:15)	June 6 (08:25)
Thanksgiving	June 18 (07:45)	June 19 (07:30)



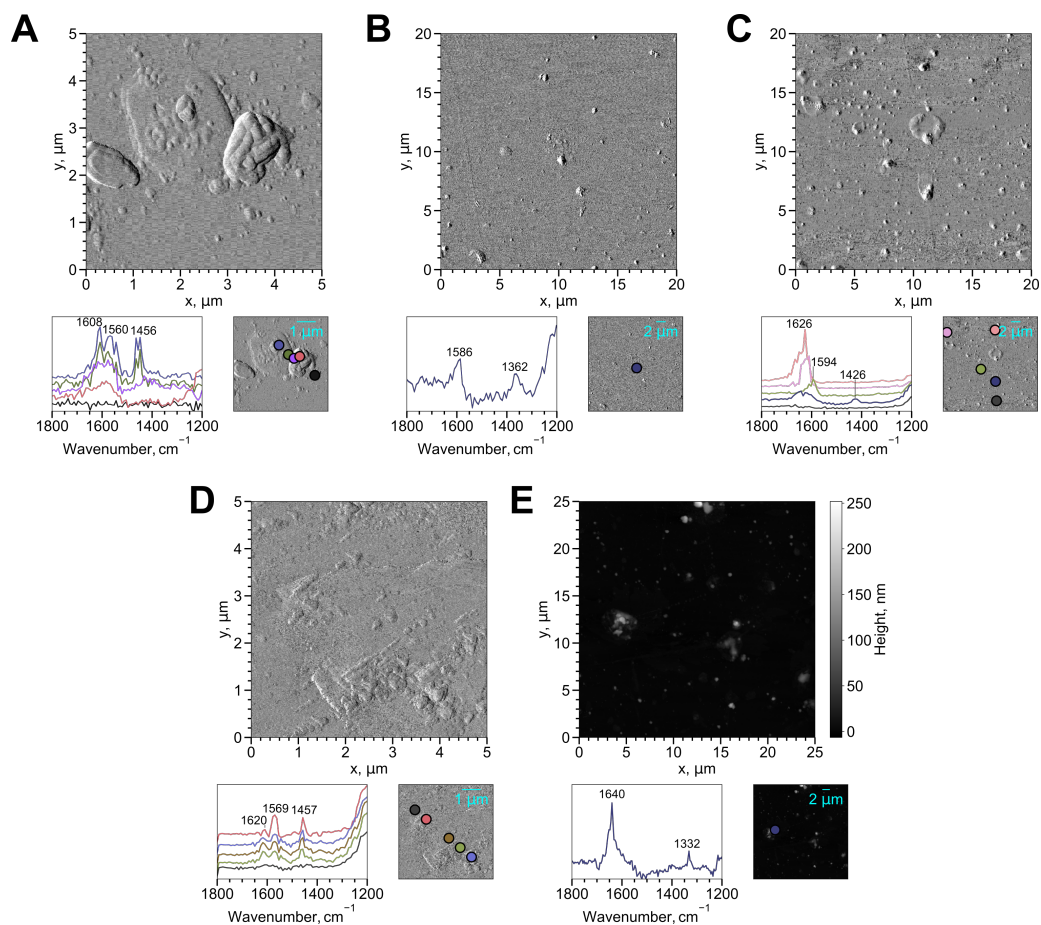
**Figure S1.** Surface deposited number distributions from laboratory blank (left) and unoccupied background (right) event, with insets showing the larger submicron sized particles.



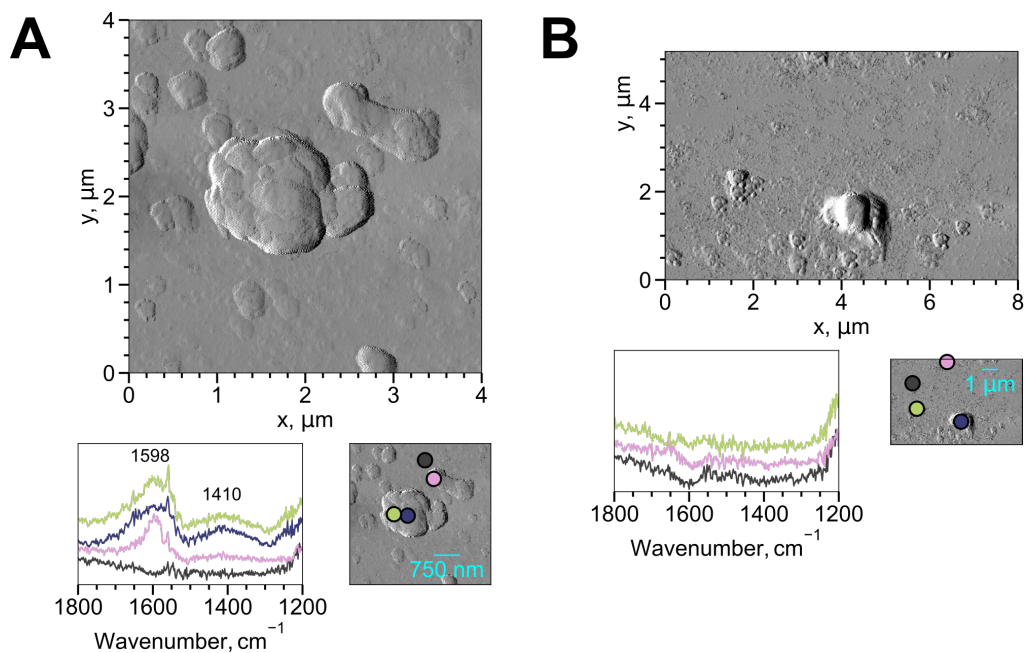
**Figure S2.** Cumulative airborne size distributions from the unoccupied background event measured by the SMPS. The start of the sampling overlapped with the decay phase of an oven run which resulted in an elevated concentration of UFP.



**Figure S3.** 3D AFM height images of the laboratory blank and unoccupied background glass slides in panels A and B respectively. The upper image is a typical image of the corresponding sample while the lower shows the images where a large supermicron particle remained deposited.



**Figure S4.** AFM-IR spectra and the corresponding AFM images (with color marked locations) of deposited particles from the stir fry event. In each panel shown, the upper image is the AFM image, with corresponding color spectra and the same AFM image with corresponding color markers showing spectra position below in the bottom left and right subpanels respectively.



**Figure S5.** AFM-IR spectra and the corresponding AFM images (with color marked locations) of deposited particles from the Thanksgiving event. In each panel shown, the upper image is the AFM image, with corresponding color spectra and the same AFM image with corresponding color markers showing spectra position below in the bottom left and right subpanels respectively.

**Table S2.** A comparison of the surface properties of the laboratory blank and unoccupied background with the image containing the supermicron particle shown in **Figure S3** excluded from analyses. The uncorrected surface properties from **Table 1** are reincluded in the lower half of the table for comparison.

Event	$R_q$ , nm	$\Delta SA$ , $\mu m^2$	$z_{eq, film}$ , nm	$\theta$ , %
Unoccupied Background <sub>(Corr)</sub>	2.9 (0.6)	0.9 (0.3)	0.4 (0.2)	6.4 (4.1)
Laboratory Blank <sub>(Corr)</sub>	3.1 (4.3)	0.6 (0.6)	0.2 (0.2)	1.4 (0.4)
Laboratory Blank	6.0 (8.5)	1.0(1.2)	0.4(0.7)	1.8(1.2)
Unoccupied Background	7.8(13.2)	1.4(1.2)	0.8(1.2)	6.0(3.9)

$R_q$  : root mean square roughness (Eq. 6)

$\Delta SA$ : change in surface area (Eq. 4)

$z_{eq, film}$ : film equivalent thickness (Eq.5)

$\theta$ : surface coverage by deposited material taller than 2 nm in height (Eq. 7)