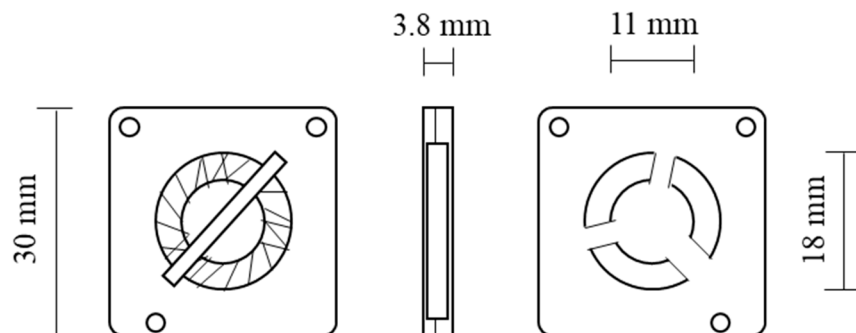
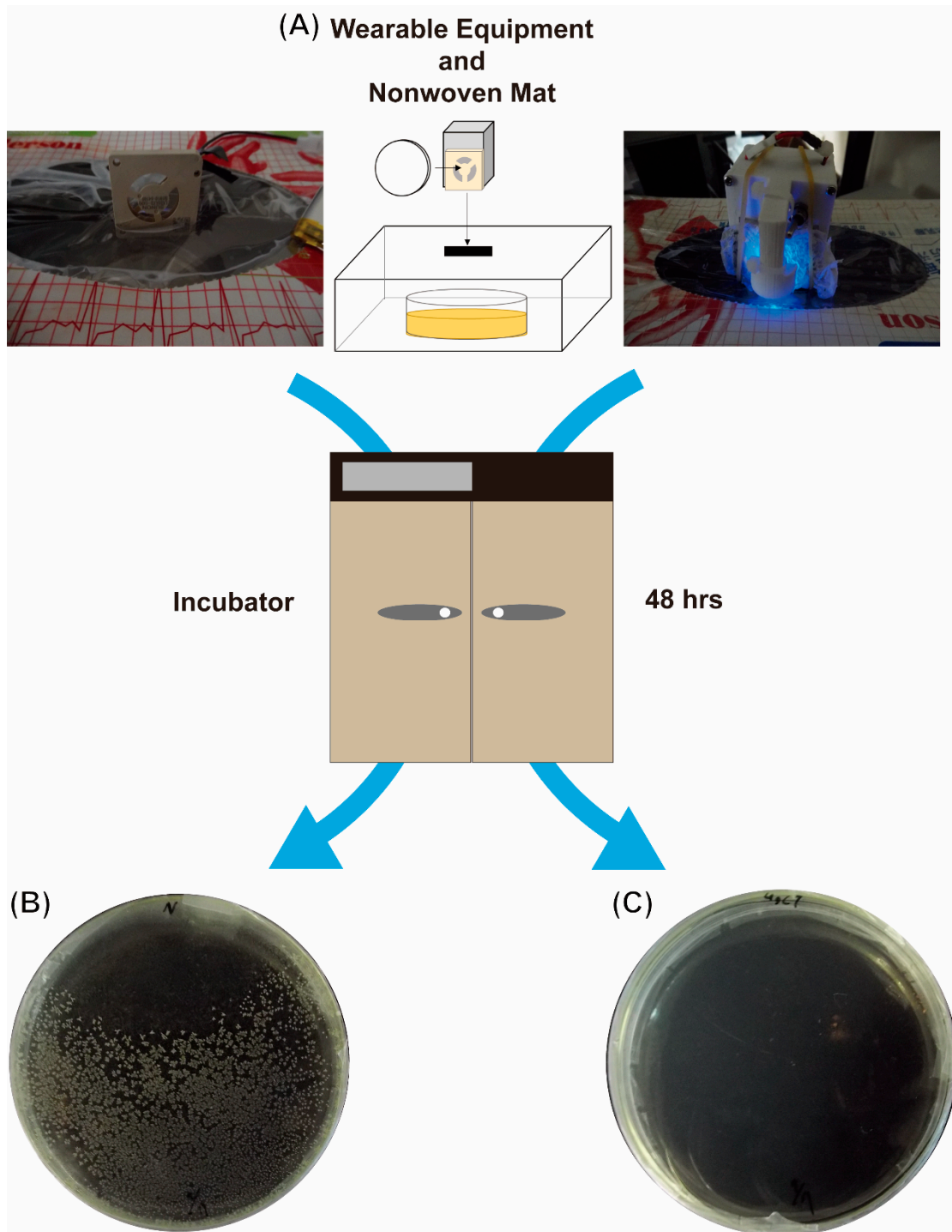


Schematic Diagram S1. Experimental steps of the nonwoven mats fumigated with sidestream smoke.



Schematic Diagram S2. Powerful yet compact blower attached to portable equipment.



Schematic Diagram S3. Experimental steps of the pollutant filtrate. (A) The combination of the wearable equipment and nonwoven mat, (B) The control plate, (C) The filter plate

Table.S1 The porosity of nonwoven mat (fG : fish Gelatin, g : gallic acid, lp : liquid paraffin)

| Sample | Count | Total Area (μm^2) | Average (μm^2) | Standard Deviation | Porosity (%) |
|--------|-------|-----------------------------------|--------------------------------|-----------------------|-----------------|
| fG | 972 | 259.69 | 0.27 | 0.40 | 14.84 |
| fGg | 1244 | 548.39 | 0.44 | 0.61 | 31.59 |
| fGlp | 965 | 193.48 | 0.20 | 0.38 | 7.51 |
| fGgIp | 908 | 202.843 | 0.223 | 0.33547 | 11.566 |

Table.S2 The porosity of nonwoven mat (fG : fish Gelatin, g : gallic acid, T : Tween

| Sample | Count | Total Area (μm^2) | Average (μm^2) | Standard Deviation | Porosity (%) |
|--------|-------|-----------------------------------|--------------------------------|-----------------------|-----------------|
| fG | 622 | 36.31 | 0.06 | 0.08 | 18.32 |
| fGg | 976 | 40.68 | 0.04 | 0.04 | 20.58 |
| fGT | 308 | 10.83 | 0.03 | 0.03 | 5.49 |
| fGgT | 379 | 19.89 | 0.05 | 0.06 | 10.08 |

Table.S3 The integral area and absorbed dose of experimental groups.

| | | fGglp | F-fGglp | UV- F-fGglp | fGgT | F-fGgT | UV- F-fGgT |
|------------------------|-----------------------------------|----------|----------|----------------|---------|---------|---------------|
| Gallic acid | Leaching dose (mg) | 1.97 | 1.87 | 1.90 | 1.90 | 2.02 | 2.19 |
| | | ± | ± | ± | ± | ± | ± |
| | | 1.02 | 0.27 | 0.10 | 0.94 | 0.64 | 1.09 |
| Nicotine | Adsorbed dose (μg) | | 152.25 | 180.10 | | 101.15 | 162.91 |
| | | none | ± | ± | none | ± | ± |
| | | | 6.59 | 16.08 | | 16.15 | 17.23 |
| Liquid paraffin | Integral area (mAU ²) | 257146 | 333085 | 345082 | | | |
| | | ± | ± | ± | | | |
| | | 17824.99 | 11895.65 | 10468.82 | | | |
| Tween 80 | Integral area (mAU ²) | | | | 107896 | 163457 | 190243 |
| | | | | | ± | ± | ± |
| | | | | | 4804.36 | 3729.37 | 8427.22 |

Table.S4 The intensity of nicotine derivatives in Figures 9C–F (fG : fish Gelatin, g : gallic acid, lp : liquid paraffin, F : fumigated, UV : 365 nm)

| | F-fGlp | F-fGglp | UV-F-fGlp | UV-F-fGglp |
|---|---------------|----------------|------------------|-------------------|
| Nicotine (m/z = 163) | 60.49 | 293.26 | 78.12 | 733.10 |
| Nornicotine (m/z = 149) | 30.19 | 93.03 | 47.02 | 65.87 |
| Nicotine-N-Oxide (m/z = 179) | 25.22 | 61.80 | none | 34.90 |
| Cotinine (m/z = 177) | 35.20 | 203.64 | 68.45 | 189 |
| Trans-3'-Hydroxycotinine (m/z = 193) | none | 138.63 | 138.80 | 190.48 |

Table.S5 The intensity of nicotine derivatives in Figures 10C–F (fG : fish Gelatin, g : gallic acid, T : Tween 80, F : fumigated, UV : 365 nm)

| | F-fGT | F-fGgT | UV-F-fGT | UV-F-fGgT |
|---|--------------|---------------|-----------------|------------------|
| Nicotine (m/z = 163) | 3826.03 | 4648.52 | 4602.83 | 8860.32 |
| Nornicotine (m/z = 149) | 1027 | none | 1006.08 | 174.94 |
| Nicotine-N-Oxide (m/z = 179) | 663.85 | 1424.49 | 1243.65 | 1161.72 |
| Cotinine (m/z = 177) | none | none | none | none |
| Trans-3'-Hydroxycotinine (m/z = 193) | 274.38 | none | 552.82 | none |