

Supplementary Material

Table S1 (a). Comparison of different fitting methods of xylene emitted from anticorrosive primer.

Fitting method	R^2
Full-time domain single-exponential function fitting	0.9499
Single-exponential function fitting only the data after 48 h	0.9854
Double-exponential function fitting	0.9835

Table S1 (b). Comparison of different fitting methods of formaldehyde emitted from Particle board.

Fitting method	R^2
Full-time domain single-exponential function fitting	0.2867
Single-exponential function fitting only the data after 57 h	0.9750
Double-exponential function fitting	0.9714

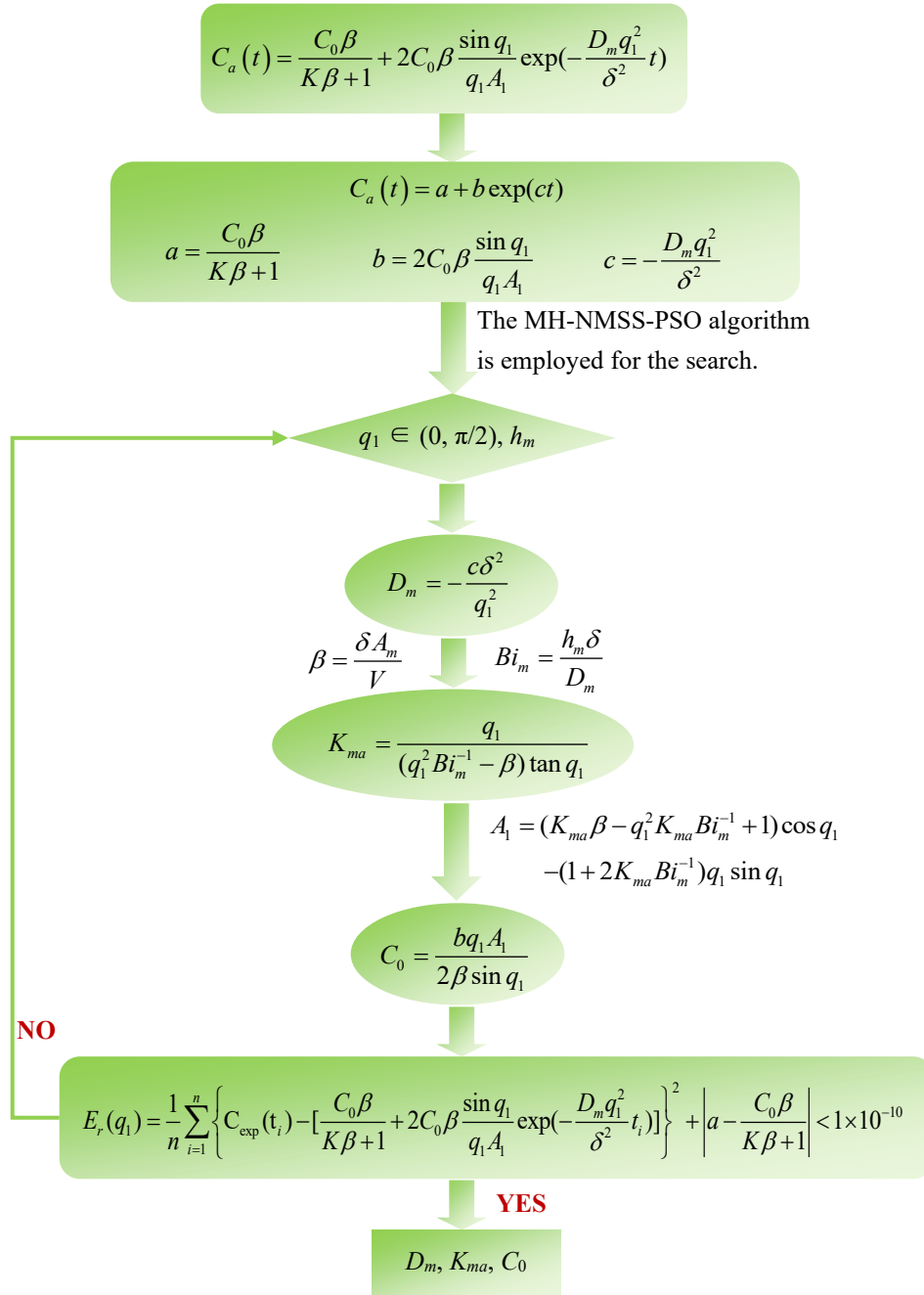


Fig S1. Flowchart of key emission parameters calculation for VOC emissions from building materials in the airtight environment chamber.

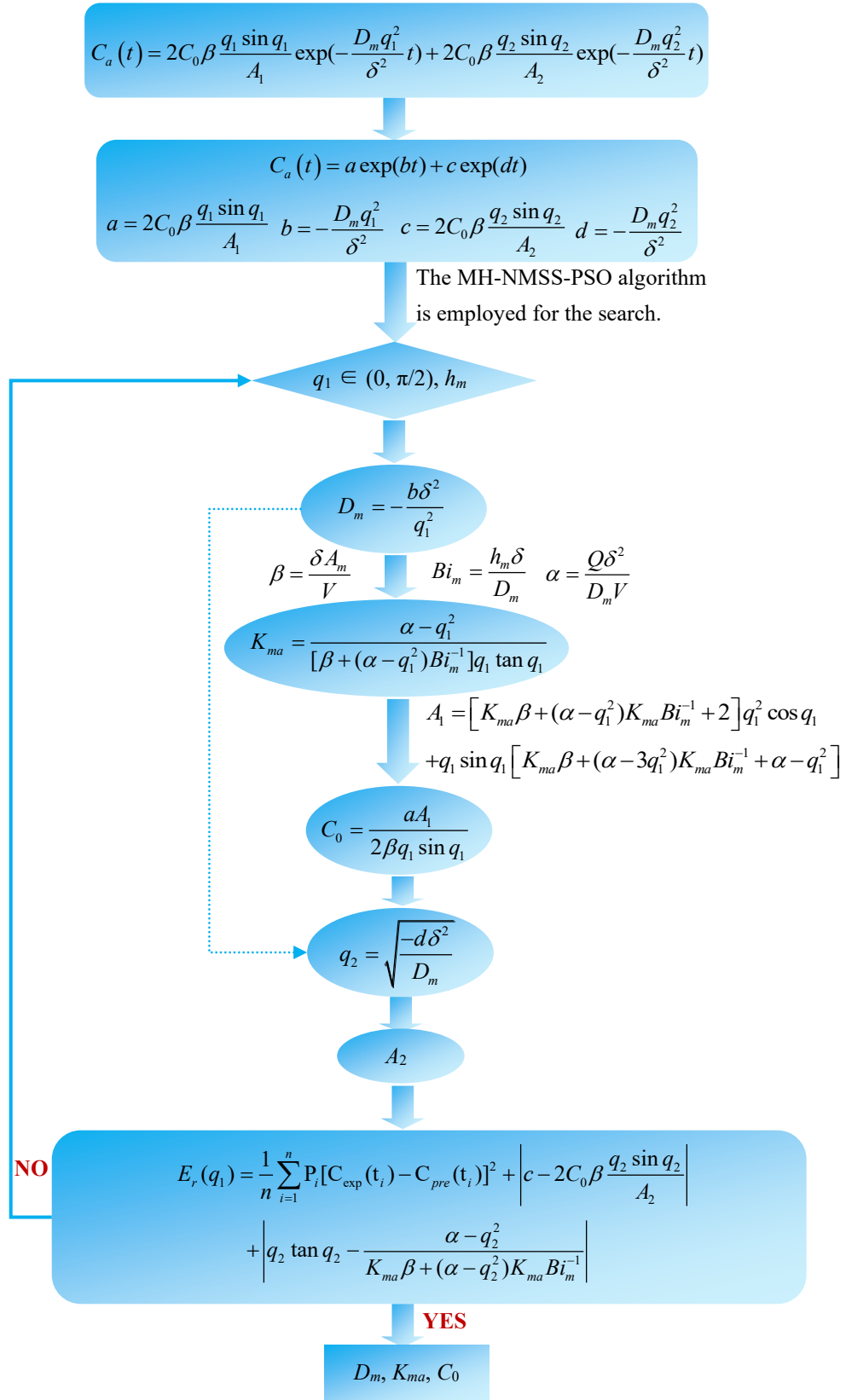


Fig S2. Flowchart of key emission parameters calculation for VOC emissions from building materials in the ventilated environment chamber.

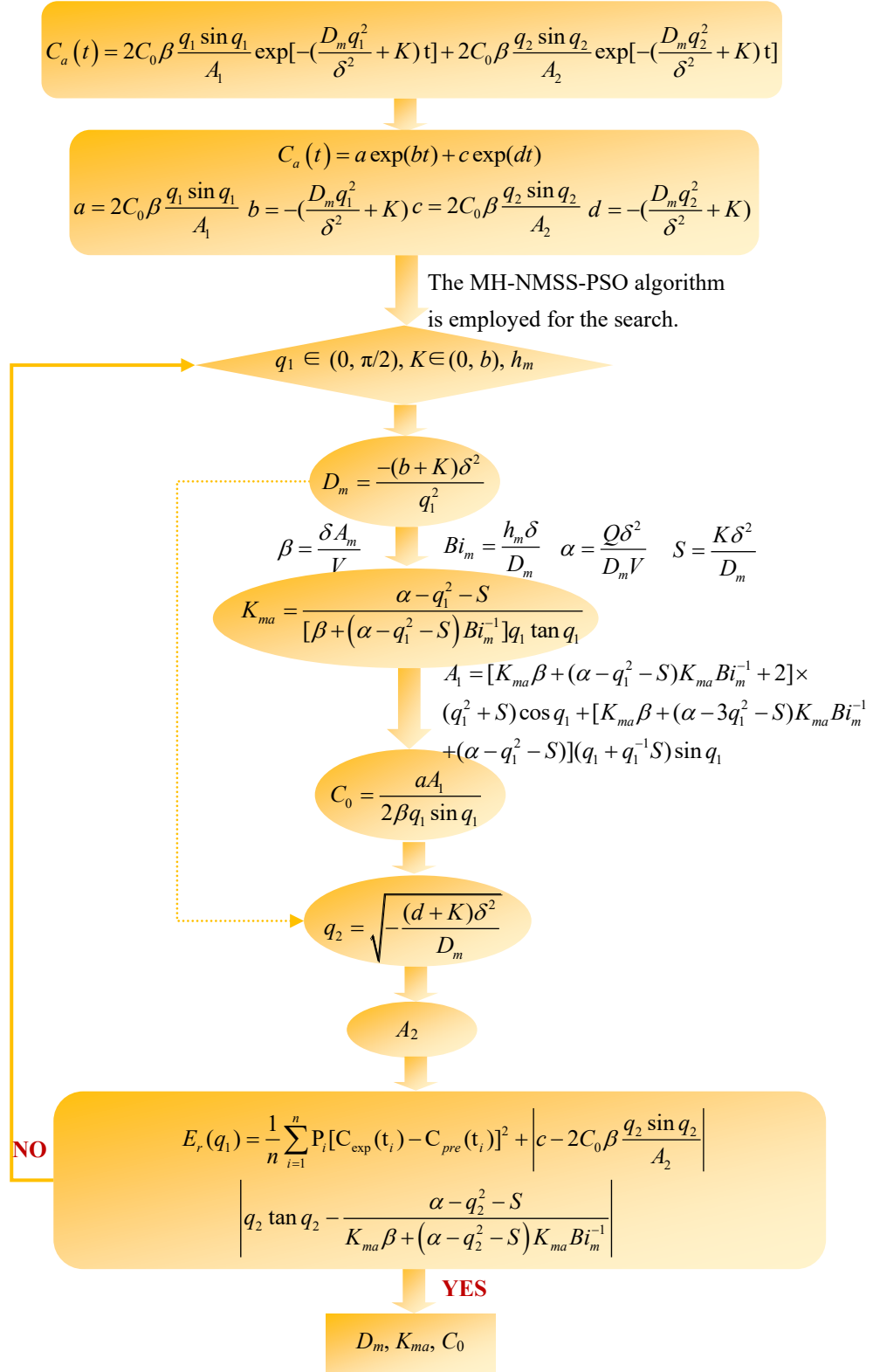


Fig S3. Flowchart of key emission parameters calculation for formaldehyde emission from wood-based panels in the ventilated environment chamber.

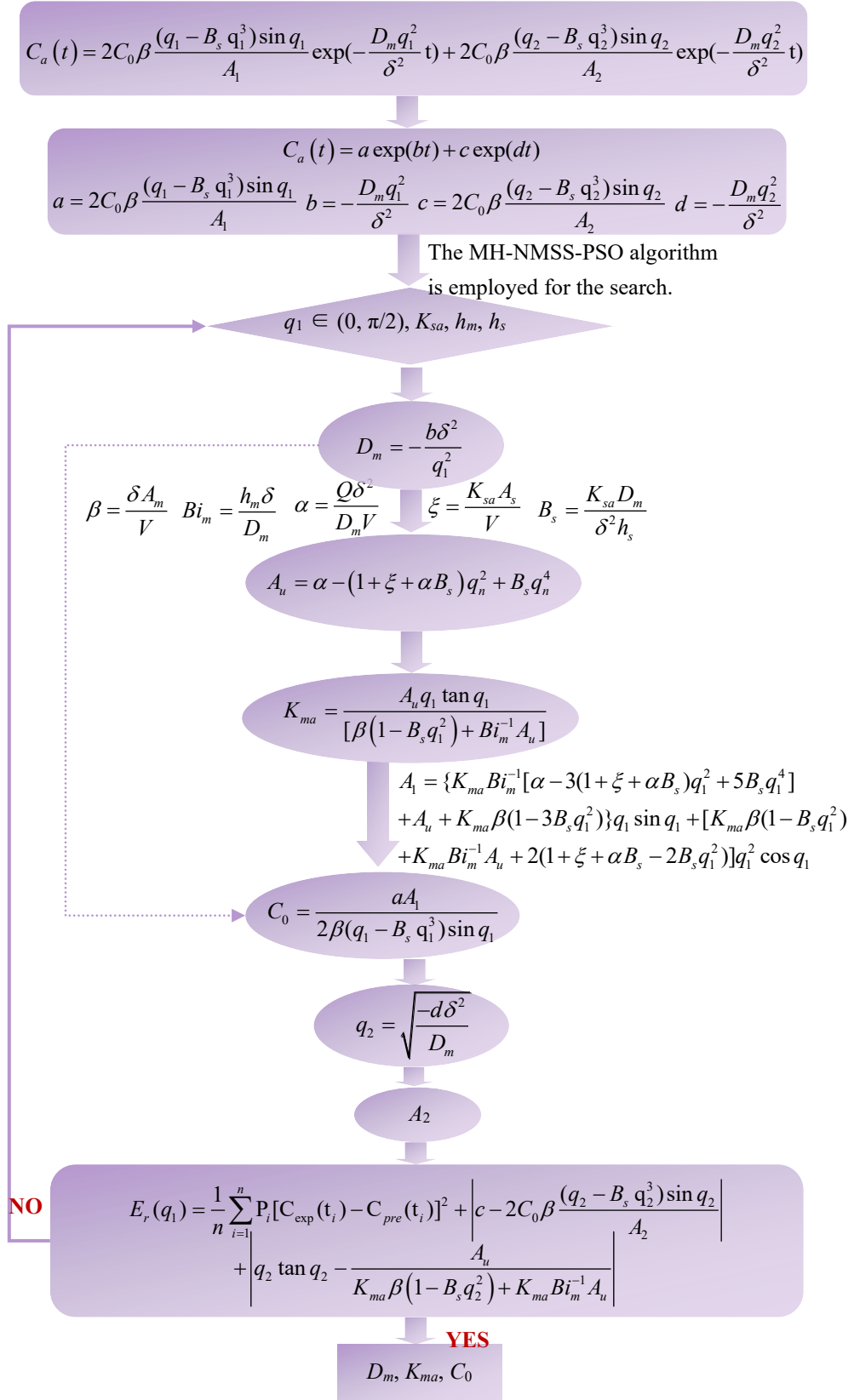


Fig S4. Flowchart of key emission parameters calculation for SVOC emissions from building materials in the ventilated environment chamber.

Experimental data on formaldehyde emissions from two typical indoor building materials (MDF1 and PB2), as shown in Table 1(b), were selected. Keeping the partition coefficient and initial releasable concentration constant, the diffusion coefficients obtained from the modified and traditional empirical formulas were used to simulate the emission processes of these two materials. The simulated results were then compared with the experimental data, as provided in Fig S5. Here, D_m is the diffusion coefficient obtained from the double-exponential ventilated chamber C-history method, m^2/s ; D_m^{modified} is the diffusion coefficient calculated using the modified empirical formula, m^2/s ; and $D_m^{\text{traditional}}$ is the diffusion coefficient calculated using the traditional empirical formula, m^2/s .

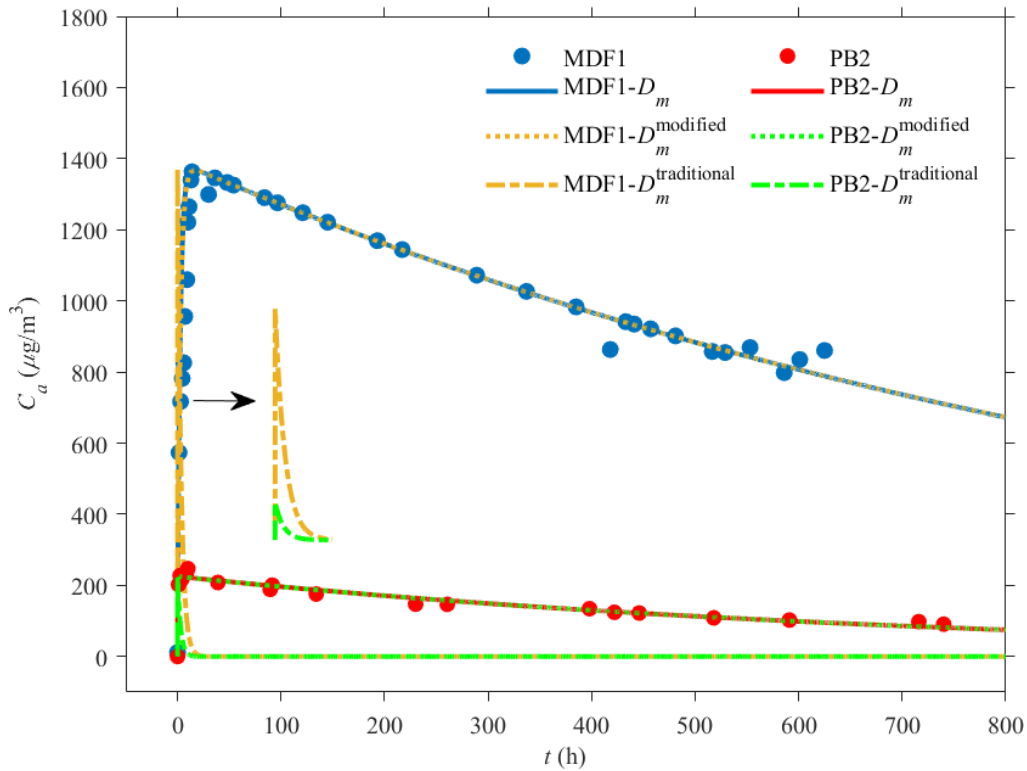


Fig S5. Comparison of diffusion coefficients calculated by the modified and traditional empirical formulas in simulating experimental data.

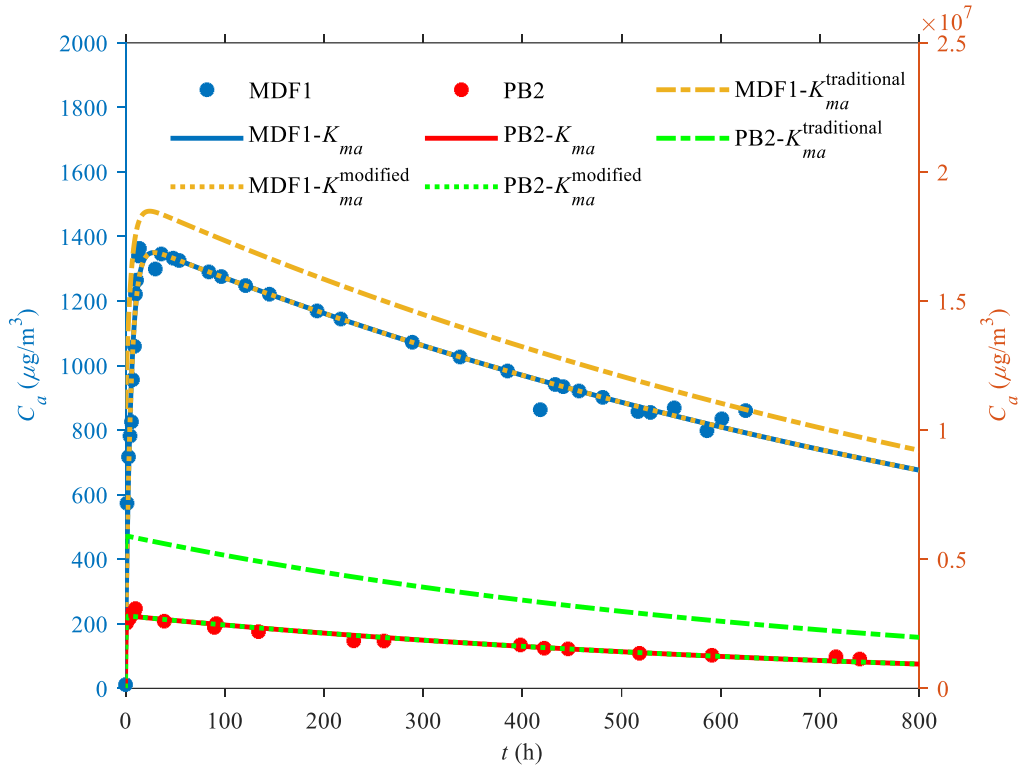


Fig S6. Comparison of partition coefficients calculated by the modified and traditional empirical formulas in simulating experimental data.

Similarly, keeping the diffusion coefficient and initial releasable concentration constant, the partition coefficients obtained from the modified and traditional empirical formulas were used to simulate the emission processes of these two materials. The simulated results were then compared with the experimental data, as provided in Fig S6. Here, K_{ma} is the partition coefficient obtained from the double-exponential ventilated chamber C-history method; K_{ma}^{modified} is the diffusion coefficient calculated using the modified empirical formula; and $K_{ma}^{\text{traditional}}$ is the diffusion coefficient calculated using the traditional empirical formula. Since the emissions simulated using the partition coefficient from the traditional empirical formula deviate considerably from the experimental data, they are referenced to the right-hand y-axis.