Quantification of Viable Bioaerosol Emanation from an ACMV System and Its Impact on Indoor Bioaerosol Pollution

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Supplementary Material

Preparation of agar plates, and incubation and colony counting of air-sampled agar plates

Before each sampling experiment, the air sampling flow rate of the impactor with a dummy agar plate inside is calibrated by a calibrator (SKC). After calibration, the dummy agar plate is discarded and the impactor is kept in the biological safety cabinet (NUAIRE) under UV light for sterilization before it is transported to the sampling site. Between each air sampling, the impactor is cleaned by laboratory wipes with disinfectant. After each day of experiment, the impactor is cleaned and sterilized by UV exposure for at least two hours. The plates for bacterial are incubated (MMM) at 35ºC for 48 hours whereas the plates for fungal are incubated in another incubator (VELP Scientifica) at 27ºC for 72 hours (SS554, 2016). After the incubation, the number of colonies on each agar plate is visually counted on a colony counter (STUART).
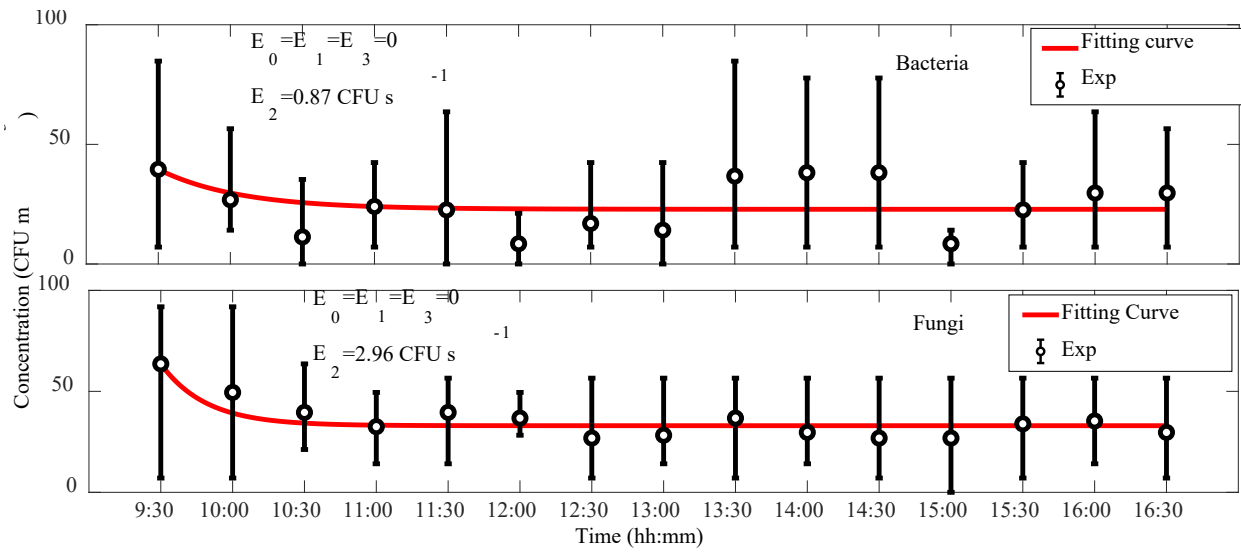
Figure

Figure S1. Daily time profile of indoor bioaerosol concentration (CFU m^{-3}) in Scenario 1 based on five days' average. Error bars show the maximum and minimum of five day samplings.
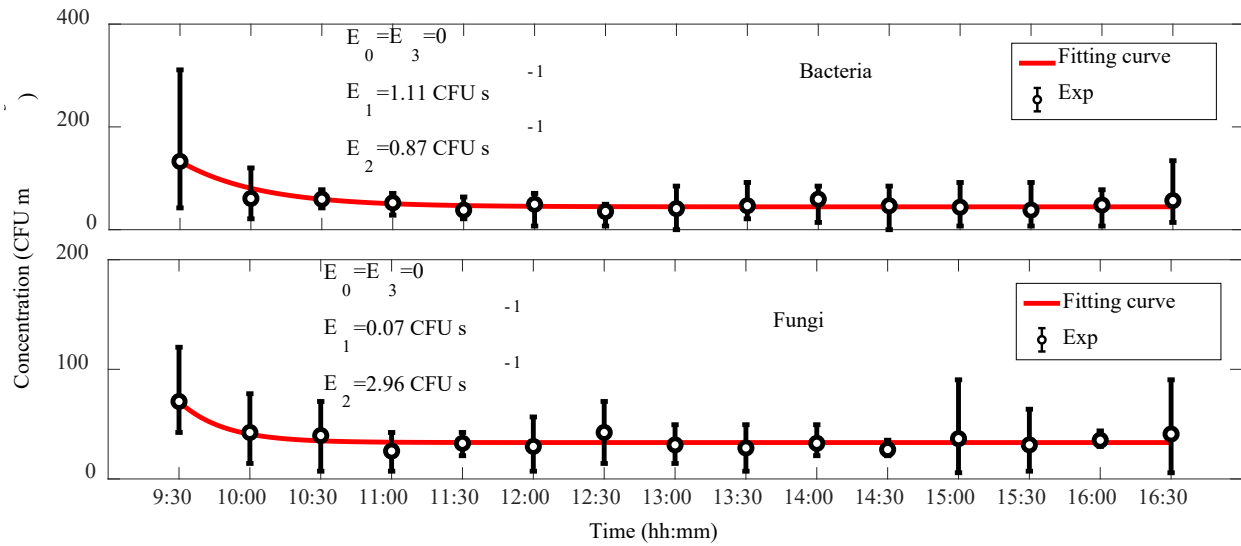
Figure S2. Daily time profile of indoor bioaerosol concentration (CFU m^{-3}) in Scenario 2 based on five days' average. Error bars show the maximum and minimum of five day samplings.
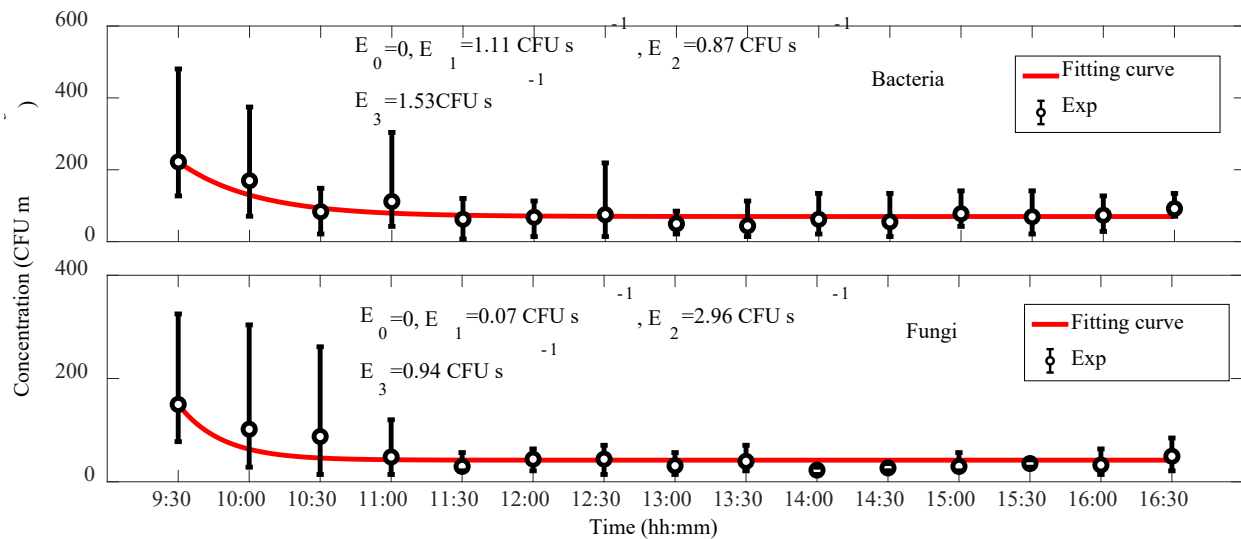

Figure S3. Daily time profile of indoor bioaerosol concentration (CFU m^{-3}) in Scenario 3 based on five days' average. Error bars show the maximum and minimum of five day samplings.
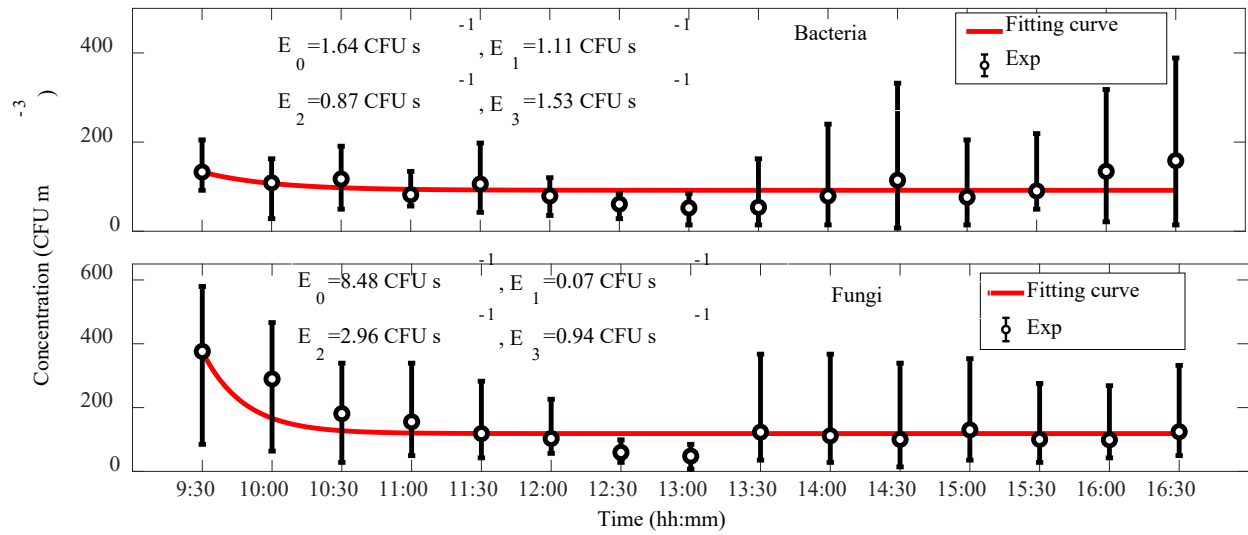
S4

Figure S4. Daily time profile of indoor bioaerosol concentration (CFU m^{-3}) in Scenario 4 based on five days' average. Error bars show the maximum and minimum of five day samplings.

Table

Table S1. Indoor temperature and relative humidity in the seven scenarios.

	Temperature (ºC) (mean ± std.dev)	Relative Humidity (%) (mean ± std.dev)
Scenario 1	24.3 ± 0.5	64.6 ± 2.3
Scenario 2	25.3 ± 0.3	64.8 ± 2.9
Scenario 3	25.3 ± 1.0	66.1 ± 3.5
Scenario 4	24.9 ± 0.1	66.0 ± 2.5
Scenario 5	28.0 ± 0.3	69.5 ± 2.40
Scenario 6	25.7 ± 0.1	68.0 ± 2.0
Scenario 7	27.5 ± 0.7	69.5 ± 2.8

Reference

(2015). Updated Bata List of Agents and Toxins Ministry of Health in Singapore, Singapore.
Council, S.S. (2016). Singapore Standard 554, In *Code of practice for indoor air quality for air-conditioned buildings*, Spring Singapore, Singapore.