

Supporting Information

Size-segregated chemical compositions of HULISs in ambient aerosols collected during the winter season in Songdo, South Korea

Kyoung-Soon Jang^{1,2,*}, A Young Choi¹, Mira Choi¹, Hyunju Kang¹, Tae-Wook Kim³ and Ki-Tae Park^{4,*}

¹ Biomedical Omics Center, Korea Basic Science Institute, Cheongju 28119, Republic of Korea

² Division of Bio-Analytical Science, University of Science and Technology, Daejeon 34113, Republic of Korea

³ Division of Environmental Science and Ecological Engineering, Korea University, Seoul 02841, Republic of Korea

⁴ Korea Polar Research Institute, Incheon 21990, Republic of Korea

Correspondence and requests for materials should be addressed to

Kyoung-Soon Jang, E-mail: ksjang@kbsi.re.kr; Tel.: +82-43-240-5196; fax: +82-43-240-5158.

Ki-Tae Park, E-mail: ktpark@kopri.re.kr; Tel.: +82-32-760-5608; fax: +82-32-770-8709.

Supplementary Figure S1. Size-resolved samples (eight size cuts between 0.43 and 11 μm) collected during the (a) preheating [27 November–1 December], (b) main heating [8–12 January] and (c) postheating [12–16 March] periods using an Anderson-type air sampler.

Supplementary Figure S2. Relationships of the particle size with the mean DBE, AI, H/C, and O/C values of CHO class species during each sampling period. The solid lines indicate the best fit.

Supplementary Figure S3. Relationships of the particle size with the mean DBE, AI, H/C, and O/C values of CHON class species during each sampling period. The solid lines indicate the best fit.

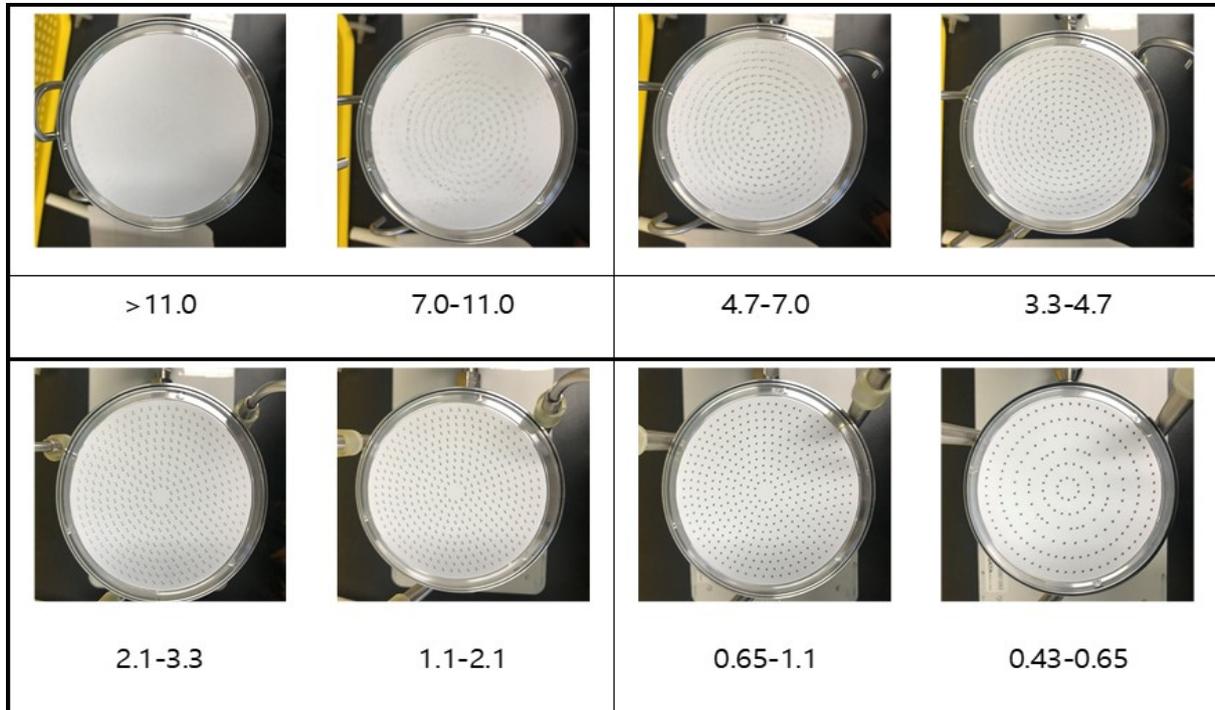
Supplementary Figure S4. Relationships of the particle size with the mean DBE, AI, H/C, and O/C values of CHOS class species during each sampling period. The solid lines indicate the best fit.

Supplementary Figure S5. Carbon number and DBE plots of the HULISs in particles between 1.1 and 2.1 μm (stage three fractions) in the pre- (**a**, **d**, **g** and **j**), main- (**b**, **e**, **h** and **k**), and postheating (**c**, **f**, **i** and **l**) periods. (Color code: CHO, blue; CHON, red; CHOS, green; and CHONS, purple).

Supplementary Figure S6. Results for three day air mass back trajectories collected at hourly intervals during each sampling period. (**a**) preheating, (**b**) main heating and (**c**) postheating periods. The black star indicates the sampling spot of Songdo.

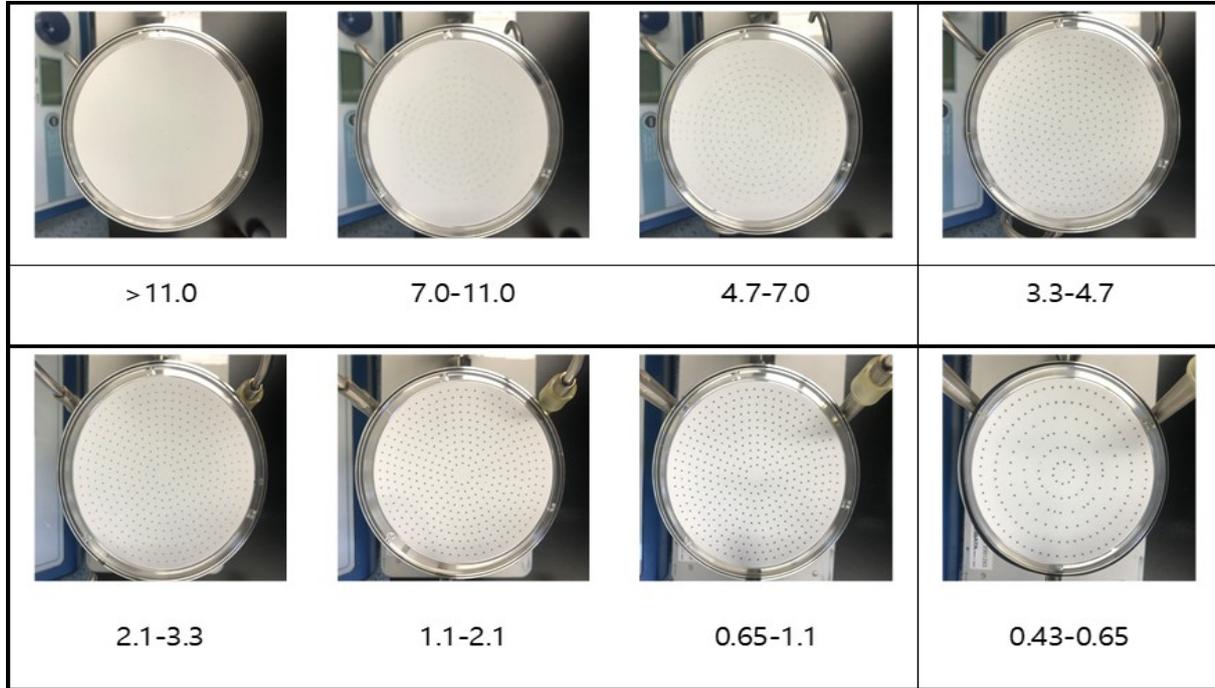
Suppl. Fig. S1.

(a)



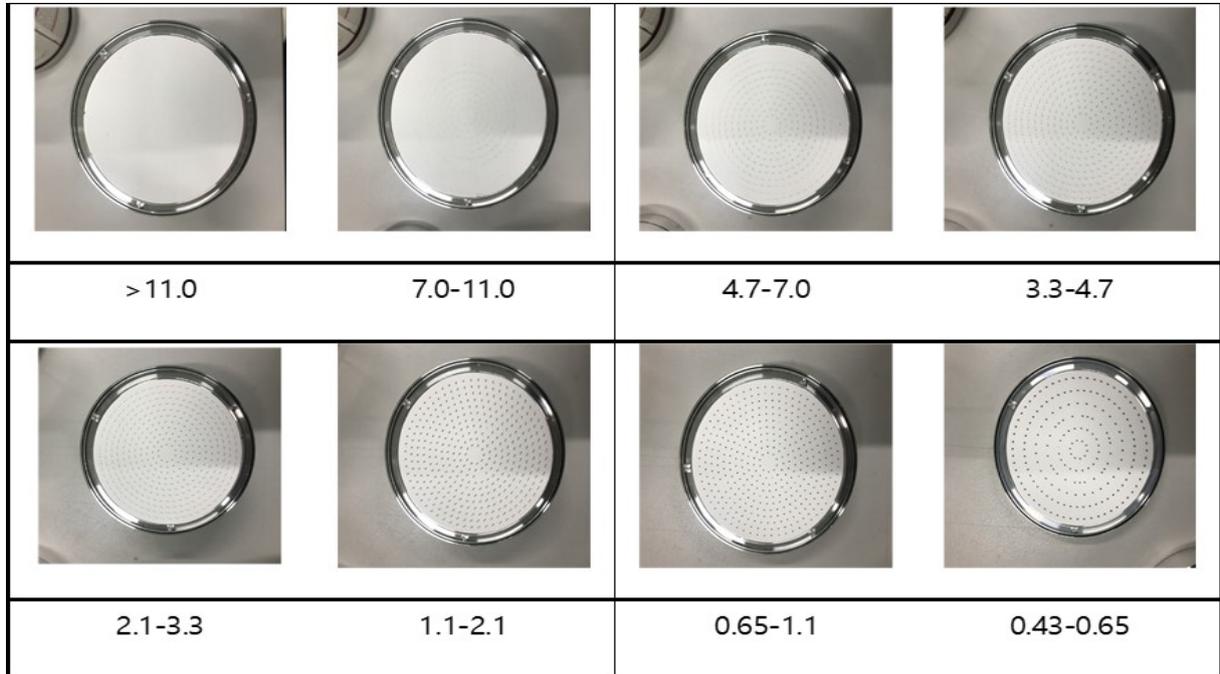
Suppl. Fig. S1. *continued.*

(b)

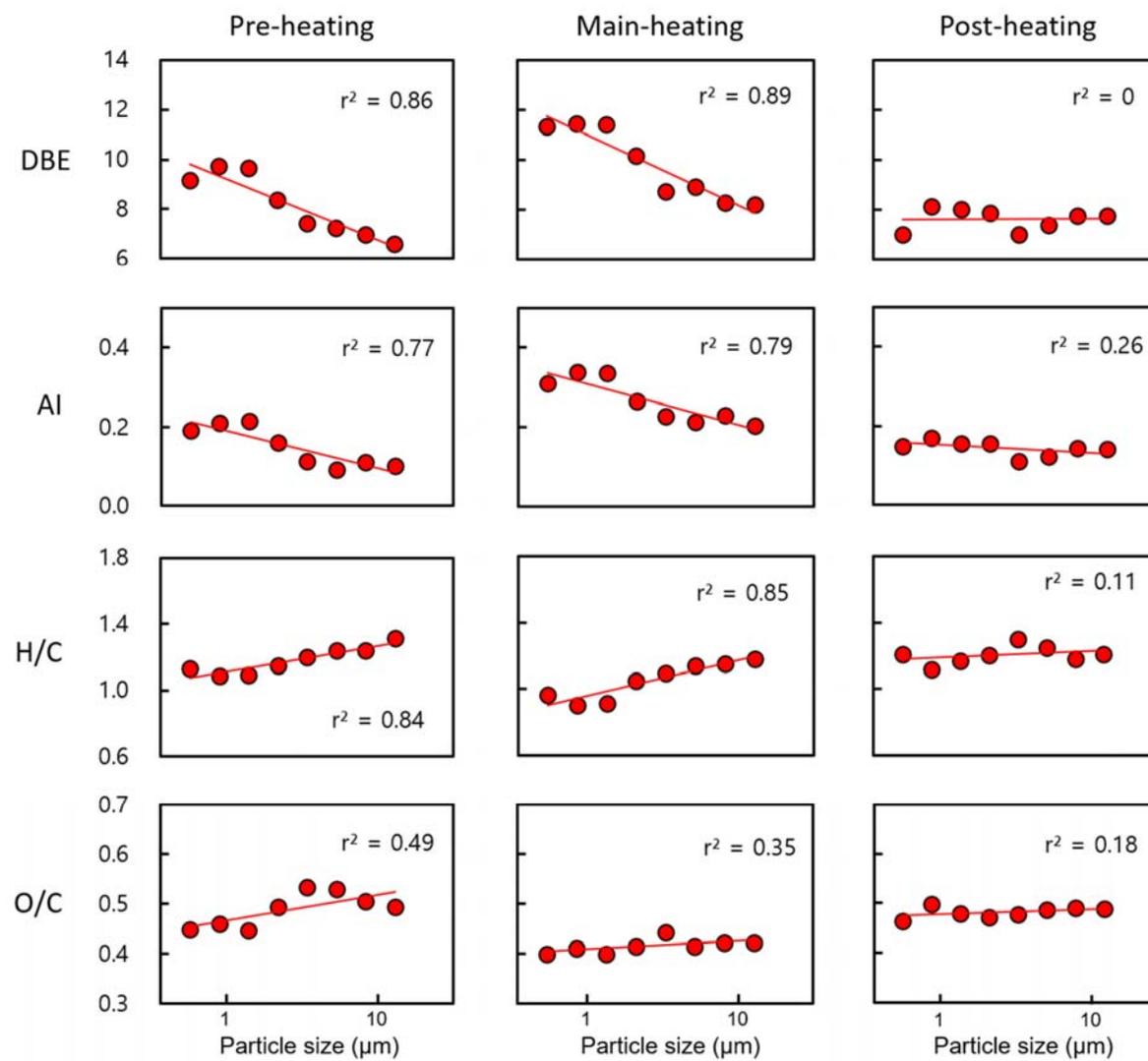


Suppl. Fig. S1. *continued.*

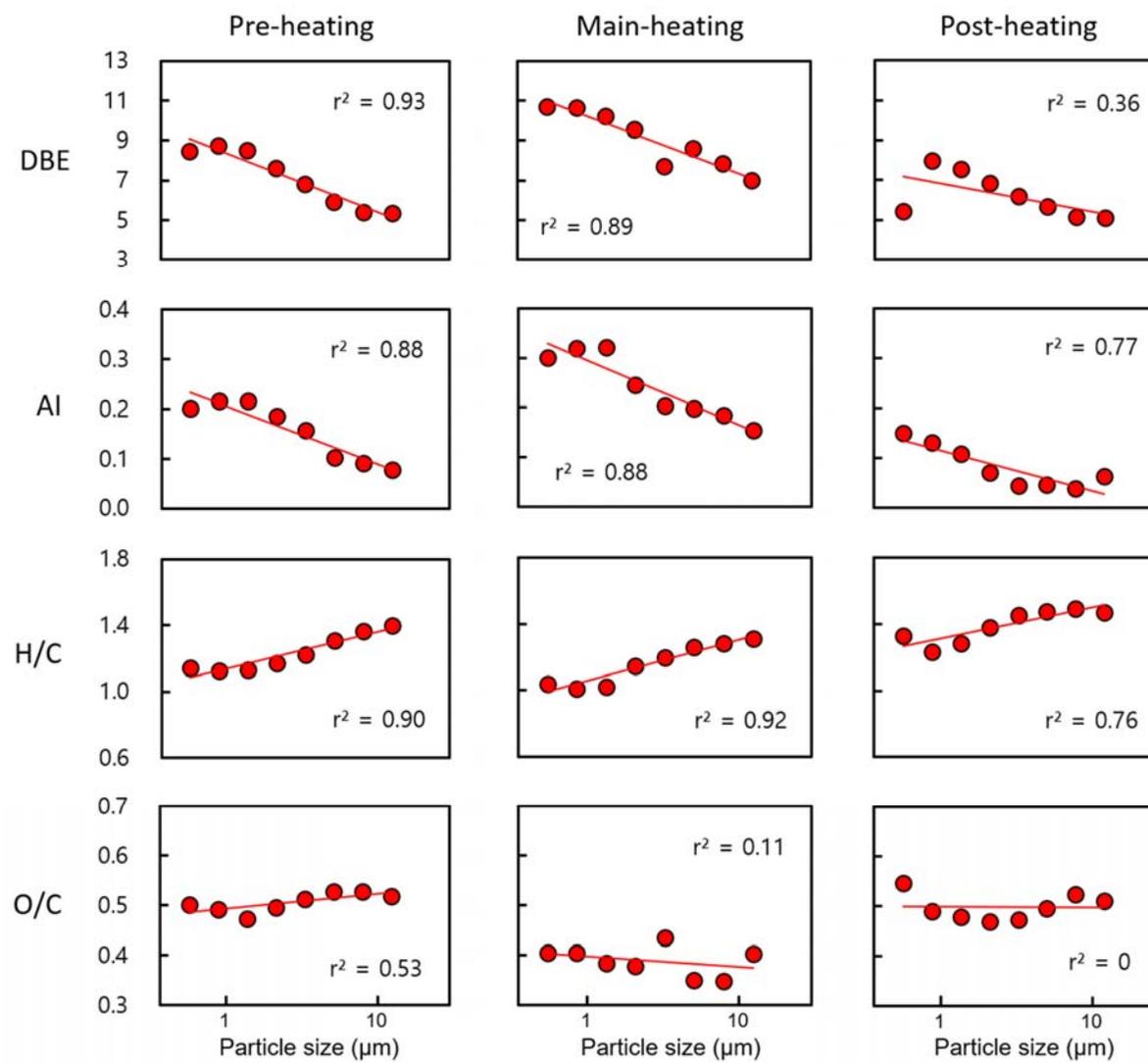
(c)



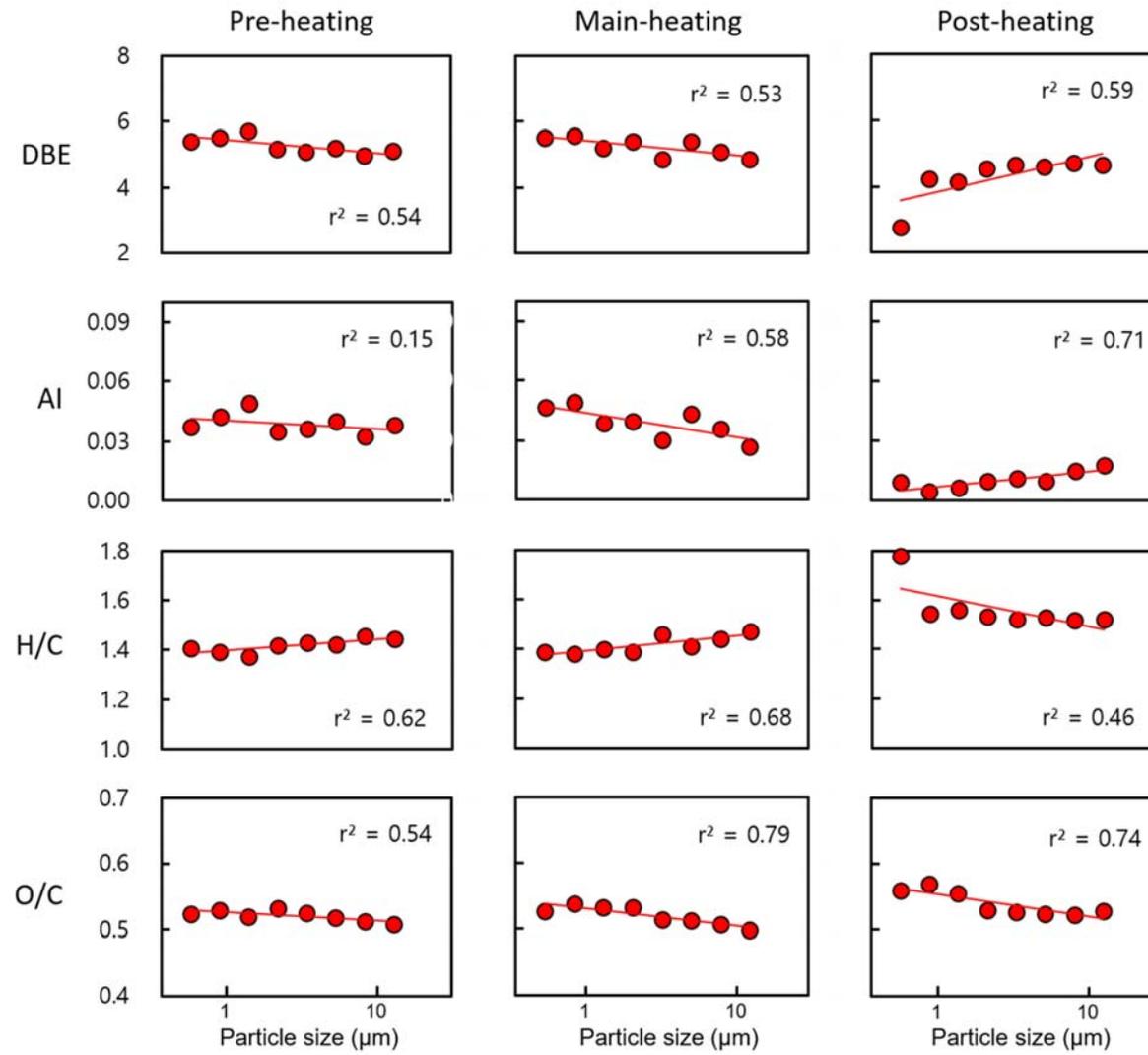
Suppl. Fig. S2.



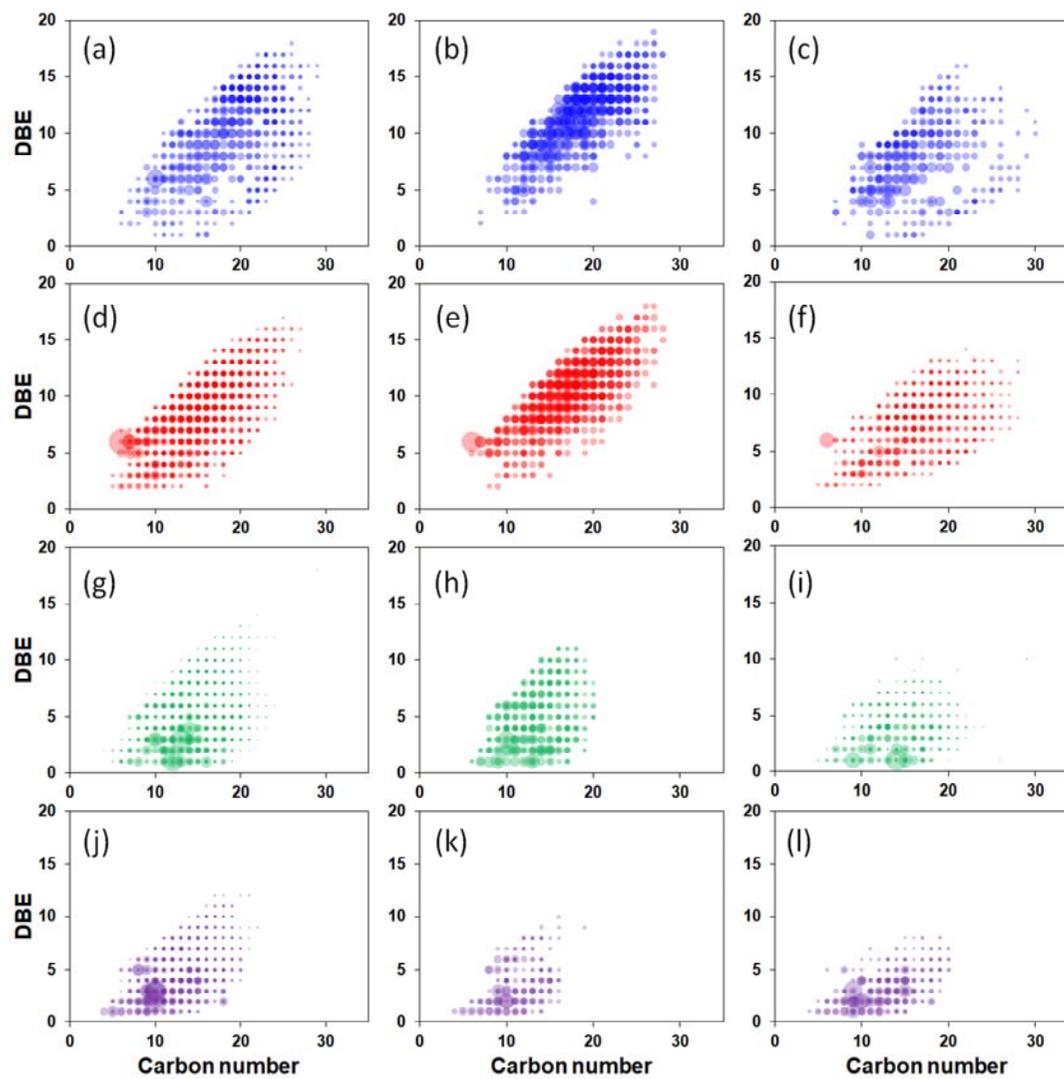
Suppl. Fig. S3.



Suppl. Fig. S4.



Suppl. Fig. S5.



Suppl. Fig. S6.

