Supplementary Material

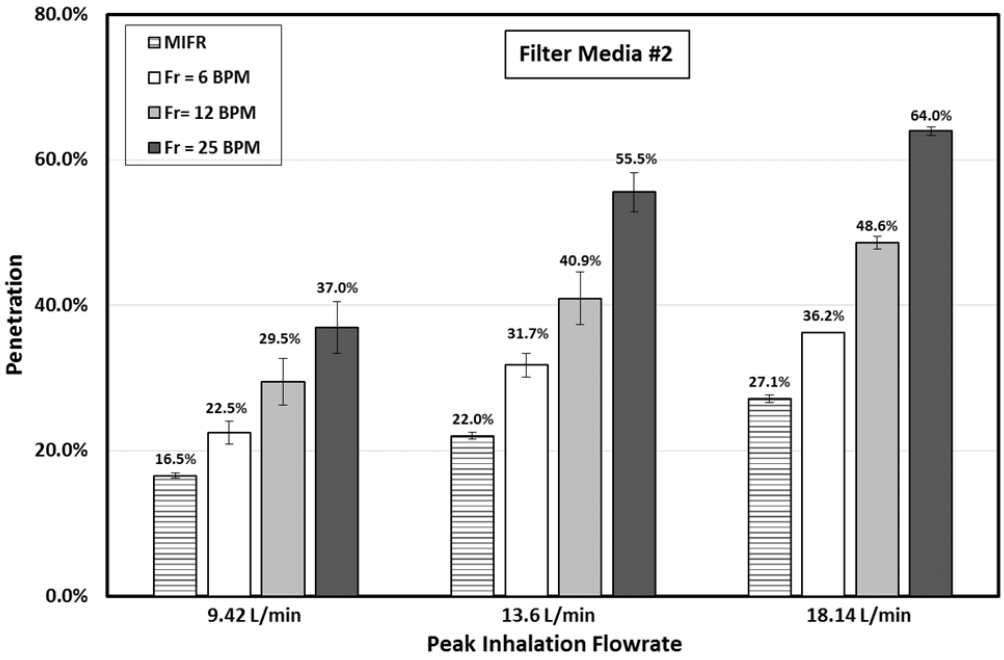

Figure a. Comparison of the peak penetration of filter medium #2 with different breathing frequencies under three different peak inhalation flowrates (PIFRs)

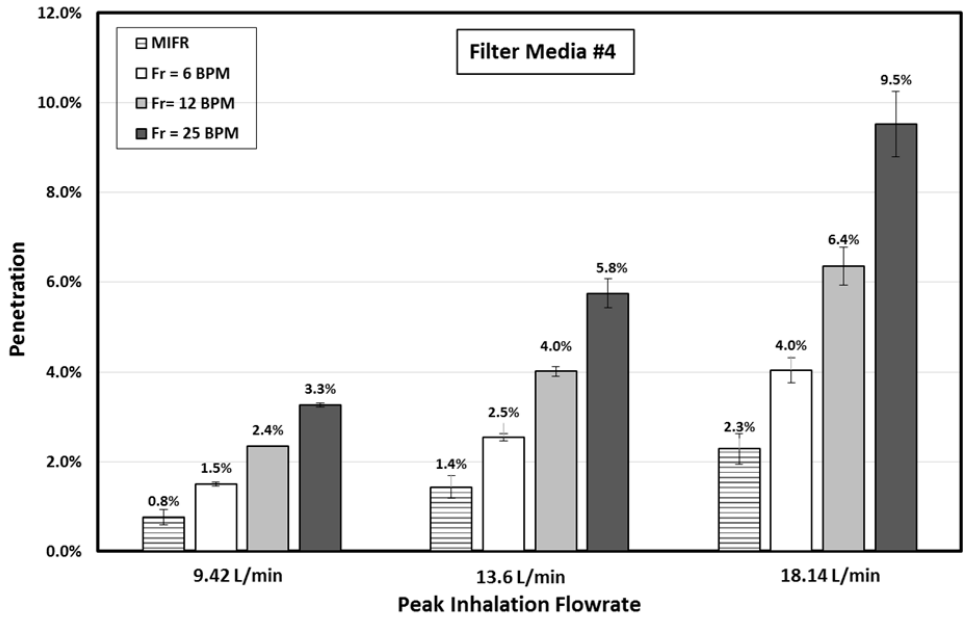

Figure b. Comparison of the peak penetration of filter medium #4 with different breathing frequencies under three different peak inhalation flowrates (PIFRs)

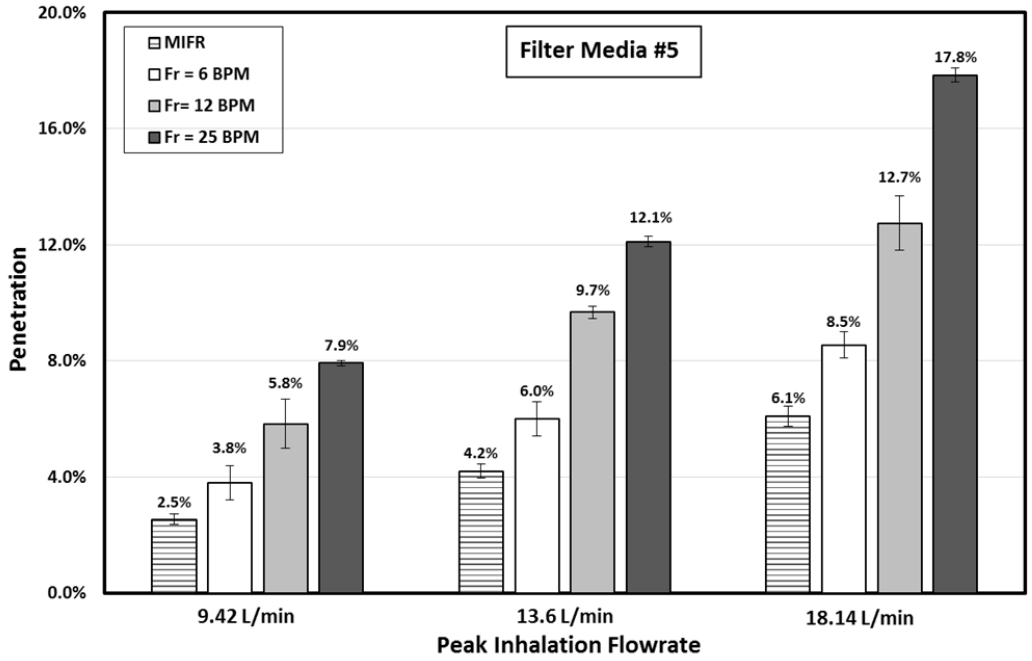

Figure c. Comparison of the peak penetration of filter medium #5 with different breathing frequencies under three different peak inhalation flowrates (PIFRs)

Table. Parameters used in the calculation of particle penetration at constant flow testing via the single fiber theory

	Media thickness (m)	Fiber diameter (m)	Fiber Solidity	Air viscosity (Poise)	Boltzmann Constant ($m^2kg\ s^{-2}K^{-1}$)	Temperature (K)	Density of particle (g/cm3)
Filer Media #1	6.26E-04	1.25E-06	0.051	1.81E-04	1.38E-23	293	2.16
Filer Media #3	8.43E-04	1.02E-06	0.037	1.81E-04	1.38E-23	293	2.16