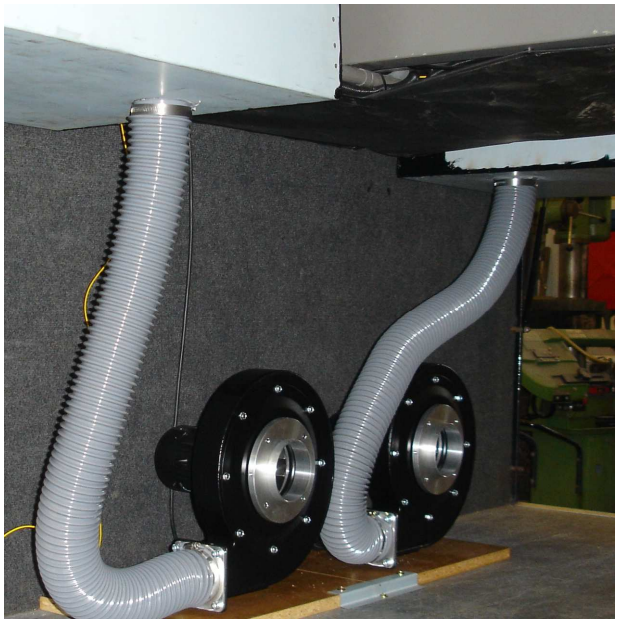
Nanoparticle filtration

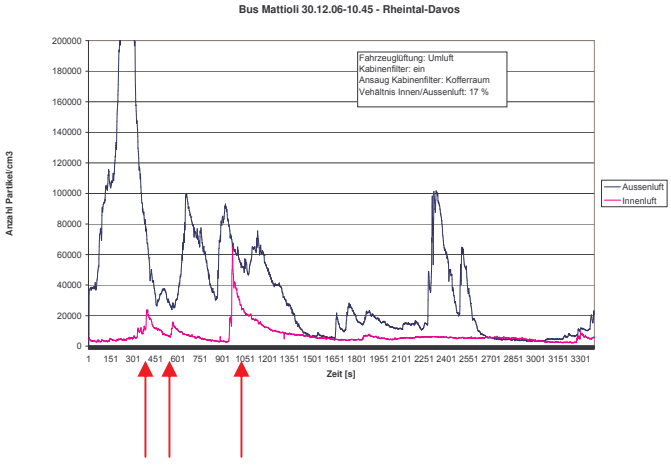
Clean air in vehicles and homes

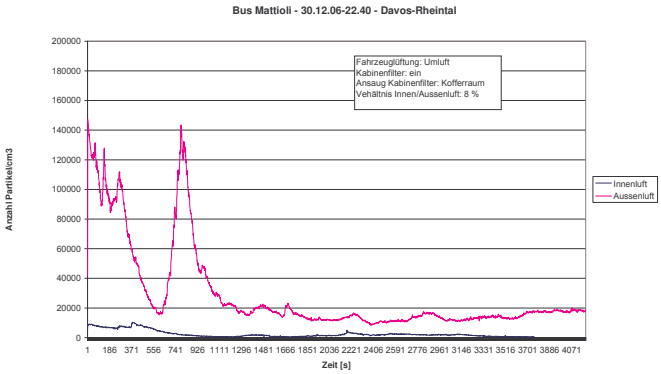
Field Trials for Buses and Coaches

Matter AG and its partners have developed new nanoparticle filtration systems, at various scales, for passenger vehicles.

Recently field tests have been carried out in a fully occupied 35-seater coach travelling from Rheintal to Davos and back. The coach was fitted with three systems each capable of 180m^3/hour airflow, fitted to replace the coach's air conditioning systems, taking air from the luggage compartments, filtering it, and delivering it to the passenger compartment. No problems were encountered with CO_2 levels.







External and internal nanoparticle levels for the ~1hour journeys to (external = blue, internal = pink) and from (external = pink, internal = blue) Davos are shown: there was a range of traffic conditions, including a crowded car-park at the start of the return journey. On the journey to Davos the windows were opened three times as indicated, and the nanoparticle count inside the bus rapidly became close to that outside: on closing the windows, the count gradually decreased again. On the return journey the windows were kept closed.

Except when the windows were open, the nanoparticle count inside was kept below 5000/cc, equivalent to 'natural woodland', even though external levels exceeded 200,000/cc: the removal of nanoparticles by cleaning making this <2.5% the external count.