

## ISRP 2002 abstract

Presenter/author	Title	Abstract
<b>Kievit, Olaf</b> Steenweg, L. Tuinman, I. van der Gijp, S.  <i>TNO Prins Maurits Laboratory, Chemical and Biological Protection, Physical Protection</i>	<b>Bio-aerosol Filtration using Electrostatic Media</b>	<p>Recent history has demonstrated that bio-aerosols play an important role in respiratory protection. Bio-aerosols differ from physical (non-biological) aerosols in the way they affect people's health.</p> <p>The inhaled mass of particles determines the effect in the case of a physical toxic aerosol. In the case of bacteria and viruses the number of inhaled particles is the relevant parameter, since living organisms can multiply once they have entered the body.</p> <p>Electrostatically charged filtration media were tested against bio-aerosols (spores, vegetative bacteria and phages). The same media were also tested against simple physical aerosols. Comparison of the results shows that the performance of a filter against bio-aerosols can be predicted adequately from test results obtained with non-biological model aerosols, with obvious advantages. Furthermore, the electrostatically charged media was used to construct a simple bio-mask. A novel design is proposed, characterised by a high protection factor, low breathing resistance and a good fit for a wide range of facial dimensions.</p>