



Aerosol Science and Technology >

Volume 1, 1982 - Issue 1



Free access

1,955 | 101

Views

CrossRef citations to date

3

Altmetric

Original Articles

Experimental Study of Aerosol Filtration by Fibrous Filters*

K. W. Lee & B. Y. H. Liu

Pages 35-46 | Received 08 Dec 1981, Published online: 21 Oct 2008

Download citation <https://doi.org/10.1080/02786828208958577>

 References

 Supplemental

 Citations

 Metrics

 Reprints & Permissions



PDF

Abstract

Submicron aerosol filtration by fibrous filters has been studied experimentally employing a filter efficiency measuring technique based on the use of moderately monodisperse aerosols and an electrical aerosol detector. Using this technique, the filtration efficiencies of filters made of uniformly sized fibers have been measured by the use of particles in the 0.035–1.3 μm diameter range. Filter solidity has ranged from 0.0086 to 0.42. Filtration velocity has been varied between 1 and 300 cm/sec. The results of the measurement have been compared quantitatively with the available theories. It has been found that theories taking into account the interference effect of neighboring fibers are in reasonable agreement with the experiments.

Related research

People also read

Recommended articles

Cited by
101

Theoretical Study of Aerosol Filtration by Fibrous Filters >

K. W. Lee et al.

Aerosol Science and Technology

Published online: 5 Jun 2007

Aerosol filtration efficiency of household materials for homemade face masks: Influence of material properties, particle size, particle electrical charge, face ... >

Frank Drewnick et al.

Aerosol Science and Technology

Published online: 8 Oct 2020

On the Minimum Efficiency and the Most Penetrating Particle Size for Fibrous Filters >

K. W. Lee et al.

Journal of the Air Pollution Control Association

Published online: 13 Mar 2012

View more

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

[Opportunities](#)

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

[Open access](#)

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

[Help and information](#)

[Help and contact](#)

[Newsroom](#)

[All journals](#)

[Books](#)

Keep up to date

Register to receive personalised research and resources
by email



[Sign me up](#)

