

Vortex Filter to Remove PM2.5 with High Flowrate



Applications

- Household Air Filtration Device
- Face Mask
- Medical device, e.g. CPAP, respirator, ventilators

The global air filters market size stood at USD12.10b in 2019, is projected to reach USD20.63b by 2027, exhibiting a CAGR of 6.9%.¹



Technology

This invention provides a microfluidic PM removal device with a staggered herringbone micromixer that can remove PM particles efficiently while maintaining a low pressure drop to improve user experience.

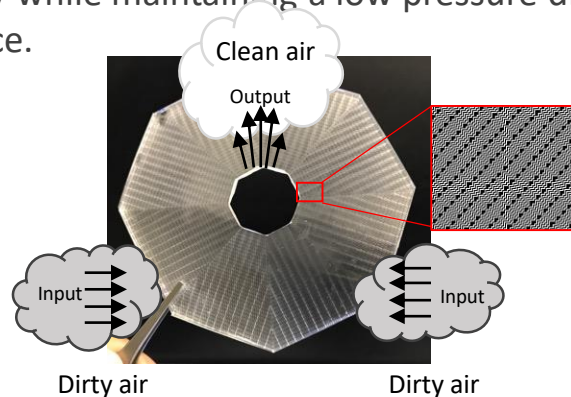


Fig 1. Prototype of the staggered herringbone micromixer



Advantages

- High PM removal efficiency with micromixer.
- Low pressure drop due to wide microfluidic channel.
- Large surface area, with herringbone-shaped grooves for PM capture.
- Can be for multiple uses.

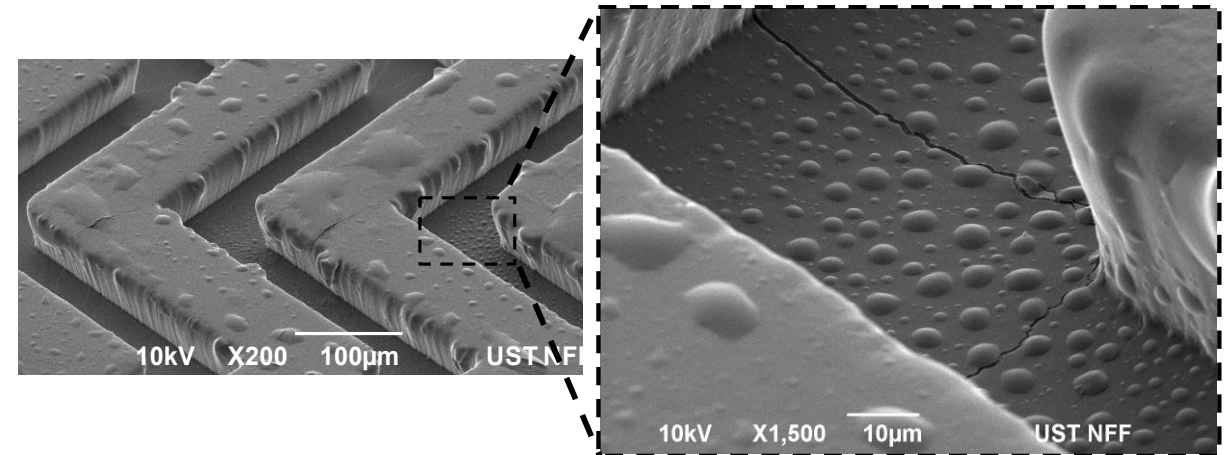


Fig 2. SEM image showing PM removal by the staggered herringbone micromixer



Intellectual Properties

USPTO US Patent Application 16/401402
 CNIPA Chinese Patent Application 201910364376.3
 HK Patent Application 42020003798.4



Talk to Us

Alex Kwong, alexkwong@ust.hk

Head (Biotechnology and Entrepreneurship Support)

1. According to market research report, "The global air filters market size stood at USD 12.10 billion in 2019, is projected to reach USD 20.63 billion by 2027, exhibiting a CAGR of 6.9% during the", ID: FBI101676, published by Fortune Business Insights in 2020

