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(31) Priority Document No	:NA	(72) Name of Inventor :
(32) Priority Date	:NA	1)KAPOOR, Mohit
(33) Name of priority country	:NA	2)SINGH, Adhish
(86) International Application No	:NA	3)SARDANA, Neha
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(57) Abstract :

The present disclosure relates to an air filtration apparatus (100) for filtering micro-organisms, the apparatus comprising: a housing (102) configured with at least one inlet (106), the inlet adapted to receive air to be filtered and at least one outlet opening (108) a circulation elements (104) configured in the housing, and adapted to circulate the received air through at least one outlet provided on the apparatus; a trapping element configured in the housing (102) such that it is adapted to receive the air from the inlet, the trapping element comprising: a wire mesh (110); a plurality of quantum dots (200) configured on the wire mesh, wherein the plurality of quantum dots on the wire mesh forms a filter adapted to restrict passage of micro-organism to facilitate flow of air with reduced micro-organism through the at least one outlet of the filtration apparatus.

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