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INTRODUCTION

In view of the recent amendment made in the Patents Act, 1970 by the Patents (Amendment) Act, 2005 effective from 01st January 2005, the Official Journal of The Patent Office is required to be published under the Statute. This Journal is being published on weekly basis on every Friday covering the various proceedings on Patents as required according to the provision of Section 145 of the Patents Act 1970. All the enquiries on this Official Journal and other information as required by the public should be addressed to the Controller General of Patents, Designs & Trade Marks. Suggestions and comments are requested from all quarters so that the content can be enriched.

(Shri Rajendra Ratnoo)
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(57) Abstract :

Title: A Multi-Layered Mask with Hydrophobic Nanofibers as functional layer with a smart valve for protection against the Aerosol transmission of COVID-19 ABSTRACT A multi-layered masks comprising five layers characterized in that first and last layers are made of cotton textile layers, natural fibre layers to filter and functionalized polymer of nanofibers layer to filter the virus of aerosols, and the mask is deployed with smart valve on outer layer of the mask Further characterised in that, the natural fibre layers forming a second and the fourth layer and functionalized polymer of nanofibers layer forming the third layer. The second layer and fourth layer are made of natural cellulose and citosan layer, the third layer is made of functionalized nanofibre using PVDF-TrFE (Polyvinylidene fluoridetrifluoroethylene) as filtrate and the third layer functions as a hydrophobic layers preventing the aerosols to enter the further layers is nanofibers of PVDF-TrFE (with nano dopants). The mask provides a smart valve used for exhalation. The polymer fiber is fabricated by an electro spinning method which uses ultrasonic processing for preparation of polymer solution, the polymer solution contain fixed quantity of PVDF-TrFE and nanodopants like graphene, cobalt, CNT, copper and silver etc., The ultrasonication is used for dispersion of dopants in the polymer. The multilayer mask is provided with an appropriate geometry with the nanodopants embedded into it.

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