**SUPPLEMENTARY INFORMATION**

**Silver incorporated Poly Vinylidene Fluoride (PVDF) Nanofibres for Bacterial Filtration**

**Felix Swamidoss V a,\* , Mohan Bangarua, Gobi Nalathambib, Dharmalingam Sangeethaa, Arun Karthick Selvamc**

Department of Mechanical Engineering a, Department of Textile Technology b, Department of Biomedical Engineering c

Anna University, Chennai -600 025, India a,b

SSN College of Engineering, Chennai- 603110, Indiac

Corresponding Author Email\*: felixdj46@gmail.com Tel: +912235 7754

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Fig S1 Cross sectional view of prepared filter

**Table SI (i) Process Parameters obtained through Box Behnken design**

 **(ii) Experimental runs obtained and sample id**

**(i)**

|  |  |  |
| --- | --- | --- |
| Variables | Process parameters | Levels |
| -1 | 0 | +1 |
| X1 | Areal Density (grams sq. meter (GSM)) | 40 | 60 | 80 |
| X2 | Electrospinning time (hr) | 1 | 2 | 3 |
| X3 | Ag (wt %) | 5 | 10 | 15 |

**(ii)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Areal Density (GSM)** | **Electrospinning Time (hr)** | **Ag** **(wt%)** | **Sample ID** |
| 1 | 40 | 3 | 10 | STAT 1 |
| 2 | 40 | 2 | 5 | STAT 2 |
| 3 | 60 | 1 | 15 | STAT 3 |
| 4 | 60 | 2 | 10 | STAT 4 |
| 5 | 80 | 3 | 10 | STAT 5 |
| 6 | 60 | 2 | 15 | STAT 6 |
| 7 | 60 | 1 | 5 | STAT 7 |
| 8 | 40 | 1 | 10 | STAT 8 |
| 9 | 60 | 3 | 5 | STAT 9 |
| 10 | 60 | 3 | 15 | STAT 10 |
| 11 | 60 | 2 | 10 | STAT 11 |
| 12 | 80 | 1 | 10 | STAT 12 |
| 13 | 80 | 2 | 10 | STAT 13- |
| 14 | 80 | 2 | 5 | STAT 14 |
| 15 | 60 | 2 | 15 | STAT 15 |
| 16 | 40 GSM PP non woven sheet | STAT 16 |
| 17 | 60 GSM PP non woven sheet | STAT 17 |
| 18 | 80 GSM PP non woven sheet | STAT 18 |

**Table SII Average fibre diameter**

|  |  |  |
| --- | --- | --- |
| **S.No** | **Sample** | **Average Fibre Diameter(nm)** |
| 1 | PVDF + 0 wt% Ag | 286 |
| 2 | PVDF + 5 wt% Ag | 205 |
| 3 | PVDF + 10 wt% Ag | 186 |
| 4 | PVDF + 15 wt% Ag | 136 |

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**Fig S2 SEM images of (a) PVDF + 0 wt% Ag nanofibres, (b) PVDF + 15 wt% Ag, (c) PVDF + 10 wt% and (d) PVDF + 5 wt%**

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**Fig S3 Surface Topology of the produced (a) PVDF+ 15 wt% Ag nanofibres, (b) 3D view of PVDF+ 15 wt% Ag nanofibres (c) PVDF+ 15 wt% Ag nanofibres with Ra and Rq values**

**Table SIII Surface roughness data**

|  |  |  |
| --- | --- | --- |
| **S.No** | **Membrane** | **Roughness** |
| **Ra (nm)** | **Rq (nm)** |
| **1** | **PVDF- 0 wt% Ag** | **22.57** | **39.86** |
| **2** | **PVDF- 15 wt% Ag** | **82.74** | **107.46** |