

ABSTRACT

The present invention relates to an optimization of a perforated substrate and a method of manufacturing the substrate using a printing process. The method of manufacturing the perforated substrate involves a substrate which is printed with ink into black patterns via a printing cylinder. The ink is applied to the substrate with small microns inside the cylinder. The microns are fabricated using laser technology. These black patterns on the substrate are exposed to an infrared light, which creates holes within the substrate. The printed features control the flow of change through the substrate. The substrate can be used in different applications such as filters, membranes of electrical separators. Examples of applications of the material include lithium ion battery separator, capacitors, super capacitors, electrical components, Packaging for the F&B industry in the field of breathable packaging or perishable groceries, filter, micro filter, membranes, energy storage devices, and sailcloth.

Figure 1