

Enhancement of facial contact pressure and comfort with a foamed inner-shell

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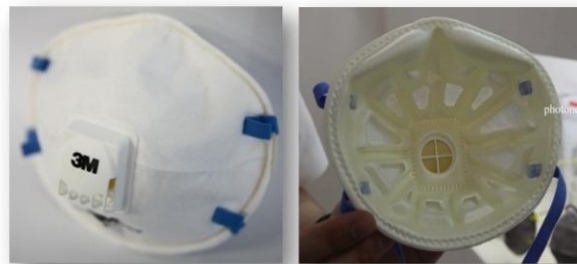
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ABSTRACT

A disposable respirator with a foam innershell has been newly introduced under the aims of better comfort and conformation to users. In order to achieve those aims, using the thermal-vacuum forming process, a new 3-D foamed innershell was developed. The innershell was designed to provide evenly distributed pressure around facial contact while allowing proper air penetrations through perforated holes. In the early design stages/iterations of the foamed innershell structure, numerical modeling/simulation techniques were utilized. With the numerical experiments, the performance evaluations via experimental testing such as collapse resistance, filter pressure drop, and filter penetration were conducted. Overall development process and procedure will be described in the presentation.



This paper is considered for a poster