



Performance Comparison of Locally Available Single Dose Dry Powder Inhalers using Computational Fluid Modeling and Cascade Impactor Testing

M.A.D.A. Sudeera

Department of Mechanical Engineering, University of Moratuwa, Sri Lanka

V.P.C.Dassanayake

Department of Mechanical Engineering, University of Moratuwa, Sri Lanka

J Mangala

Department of Mechanical Engineering, University of Moratuwa, Sri Lanka

A Goonathilake

Department of Pharmacology, University of Sri Jayawardenapura, Sri Lanka

E-mails: amalsudeera@yahoo.com, palitha@mech.mrt.lk, janaka@mech.mrt.ac.lk, shamaleee@sltnet.lk

Abstract

The study was focused on evaluating the performance of locally available single dose dry powder inhalers using computational fluid dynamics (CFD) and cascade impactor (CI). CFD was used to assess the behavior of the air flow through the inhalers when the patient inhales. CI was used to assess what happens inside the patient's respiratory tract after inhaling. Results predicted in CFD clearly reflected from CI testing.