

SPIROMETRY MEASUREMENT MODEL - THE DIAGNOSTIC PURPOSE SUPPORT

Renata Kalicka¹, Wojciech Slomiński¹, Krzysztof Kuziemski²

¹Gdańsk University of Technology, Gdańsk, Poland

²Medical University of Gdańsk, Gdańsk, Poland

Abstract:

The paper presents a new model of respiratory mechanism based on the spirometry measurements. The spirometry test assesses efficiency of the lung ventilation. The respiratory system functioning is based on the ventilation mechanism. Thus the quality of the lung depends on the quality of lung ventilation. Respiratory system modelling supports a diagnostic process. The model parameter estimates are obtained on the basis of the spirometry test results. The model parameters enable us to obtain the new information concerning breathing conditions. These parameters make it also possible to distinguish between healthy and diseased subjects. The spirometry measurement model presents itself as a new diagnostically helpful aid.

Keywords: respiratory mechanism, spirometry, modelling