ACOUSTICS2008/607 New equipment for the measurements of flow resistivity and porosity of open cell ceramic and metal foams

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Two of the most important measurements in the acoustic analysis of porous media are the flow resistivity and porosity. To reduce the errors in the measurements of these parameters, new instruments have been developed, which incorporate recent technological advances. The new equipment helps to streamline the user experience and improve the confidence of the results. The current design includes the use of LabVIEW and COMSOL Multiphysics software, the use of thermal press-fit sample holders, and the use of low differential pressure transducers. The new instruments were used to study the flow resistivity and porosity of various pore sizes of open cell ceramic and metal foams. Data are presented with accompanying errors, as well as a discussion of the shortcomings and possible improvements of the measurement system.