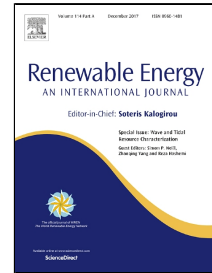


Accepted Manuscript

Development of a centrifugal fan with increased part-load efficiency for fuel cell applications

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PII: S0960-1481(17)30945-X
DOI: 10.1016/j.renene.2017.09.075
Reference: RENE 9273
To appear in: *Renewable Energy*
Received Date: 17 February 2017
Revised Date: 19 September 2017
Accepted Date: 25 September 2017

Please cite this article as: Sebastian Burgmann, Tore Fischer, Manuel Rudersdorf, Alexander Roos, Angelika Heinzl, Jörg Seume, Development of a centrifugal fan with increased part-load efficiency for fuel cell applications, *Renewable Energy* (2017), doi: 10.1016/j.renene.2017.09.075

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Centrifugal fan with variable cross-sectional area of the diffuser and volute enables to increase both efficiency and pressure ratio for operating points at off-design to achieve high overall efficiencies in a fuel cell system at part load operation.

A demonstrator centrifugal fan is investigated by means of numerical simulations (CFD), performance measurements at the blower test rig, and Particle Image Velocimetry (PIV) measurements.

A combined analytical and numerical process chain for the preliminary design and the performance prediction of the diffuser and volute geometries is developed.

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