Synopsis

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"Laminar flow through fuel cell stacks"

This study aims to do a numerical simulation using OpenFOAM v2012 of laminar flow through single sharp and curved bends channels of typical fuel cell configurations, for steady laminar flows, a systematic numerical study conducted to understand the flow structure and related phenomena in laminar flow through 90° bend over a range of curvature ratios and aspect ratios. The geometry and mesh were defined using the blockMesh utility. A steady-state, SIMPLE algorithm-based simpleFoam solver was used in the simulation. The analysis was executed by S. Jayanti, S. Maharudrayya, A.P. Deshpande [1] using the CFD Center, IIT-Madras, India.

References:

[1] "Pressure losses in laminar flow through serpentine channels in fuel cell stacks", S. Jayanti, S. Maharudrayya, A.P. Deshpande, Department of Chemical Engineering, IIT Madras, India, June 2004.