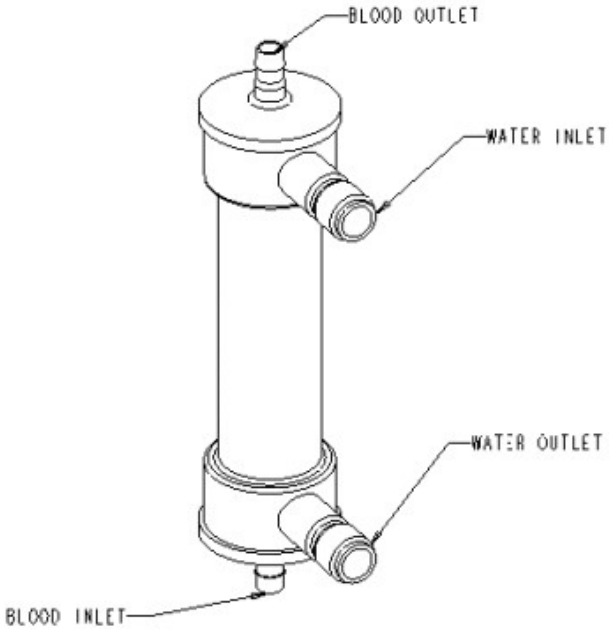
Performing Design Optimization for a Blood Cardioplegia Device

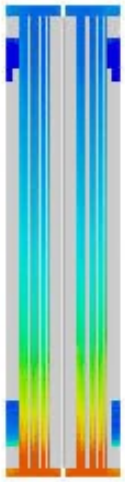
Adaptive Research

Computational Fluid Dynamics has been used effectively in the development and optimization of a blood cardioplegia device, predicting heat transfer and flow characteristics before prototypes are fabricated. Based on numerical simulations, water and blood flow paths in the heat exchanger are optimized to yield superior heat transfer performance with a minimal energy exchange surface. Experimental measurements have confirmed the validity of the results from the CFD analysis. CFD analysis performed for Sorin Biomedical.



Blood Cardioplegia Device

Temperature distribution before design optimization



Temperature distribution after design optimization

CAESIM Simulation Platform

A powerful computational fluid dynamics software program developed by Adaptive Research. CAESIM solves real-world engineering problems by simulating virtually any physical process involving fluid flow and heat transfer.