ABSTRACT

A heat transfer system that includes one or more heat exchangers and one or more variable control pumps that control flow through the one or more heat exchangers. At least one variable control pump is on the source side of the heat exchanger for controlling flow of a first circulation medium and at least one flow controlling mechanical device is on the load side of the heat exchanger for controlling flow of a second circulation medium. Sensors are used for detecting variables of the first circulation medium and the second circulation medium. At least one controller is configured to control at least one parameter of the first circulation medium or the second circulation medium by controlling at least one of the variable control pump or the flow controlling mechanical device using a feed forward control loop calculated from the detected variables to achieve control of the at least one parameter.