

## ABSTRACT OF THE DISCLOSURE

A system and method for conditioning the temperature of at least one fluid stream that is passed through a fuel cell stack is provided. The system comprises a system module, at least one inlet and a conditioning device. The system module is operable to humidify the fluid stream to reach a predetermined humidity level that corresponds to a predetermined temperature. The one inlet of the fuel cell stack receives the fluid stream at a first temperature that is different from the predetermined temperature. The fuel cell stack includes at least one outlet operable to present coolant having a temperature that is different from the first temperature of the fluid stream. The conditioning device is operable to receive the fluid stream and the coolant and present the fluid stream to the coolant to change the first temperature of the fluid stream to be equal to the predetermined temperature.