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KARUPPAIAH et al.(10) **Pub. No.: US 2023/0231172 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **SOLID OXIDE FUEL CELL SYSTEM WITH
HYDROGEN PUMPING CELL WITH
CARBON MONOXIDE TOLERANT ANODES
AND INTEGRATED SHIFT REACTOR**(71) Applicant: **Bloom Energy Corporation**, San Jose,
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Feb. 13, 2020, now Pat. No. 11,616,249.(60) Provisional application No. 62/822,198, filed on Mar.
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(57)

ABSTRACT

A fuel cell system includes a fuel cell stack, a fuel inlet conduit configured to provide a fuel to a fuel inlet of the fuel cell stack, an electrochemical pump separator containing an electrolyte, a cathode, and a carbon monoxide tolerant anode, a fuel exhaust conduit that operatively connects a fuel exhaust outlet of the fuel cell stack to an anode inlet of the electrochemical pump separator, and a product conduit which operatively connects a cathode outlet of the electrochemical pump separator to the fuel inlet conduit.

