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(71) Applicant: **DOW GLOBAL TECHNOLOGIES LLC**
[US/US]; 2211 H.H. Dow Way, Midland, Michigan 48674 (US).

(72) Inventors: **SHARMA, Manish**; c/o The Dow Chemical Company, 2301 North Brazosport Boulevard, Freeport, Texas 77541 (US). **BLANN, Kevin**; c/o The Dow Chemical Company, 2301 North Brazosport Boulevard, Freeport, Texas 77541 (US). **MALEK, Andrzej**; c/o Dow Global Technologies LLC, 2211 H.H. Dow Way, Midland, Michigan 48674 (US). **GOODFELLOW, Brian W.**; c/o The

Dow Chemical Company, 2301 North Brazosport Boulevard, Freeport, Texas 77541 (US).

(74) Agent: **INGLE, Cory J.** et al.; Dinsmore & Shohl LLP, One South Main Street, Suite 1300, Dayton, Ohio 45402 (US).

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(54) Title: OXYGEN CARRIER MATERIALS AND METHODS OF MAKING AND USING THE SAME

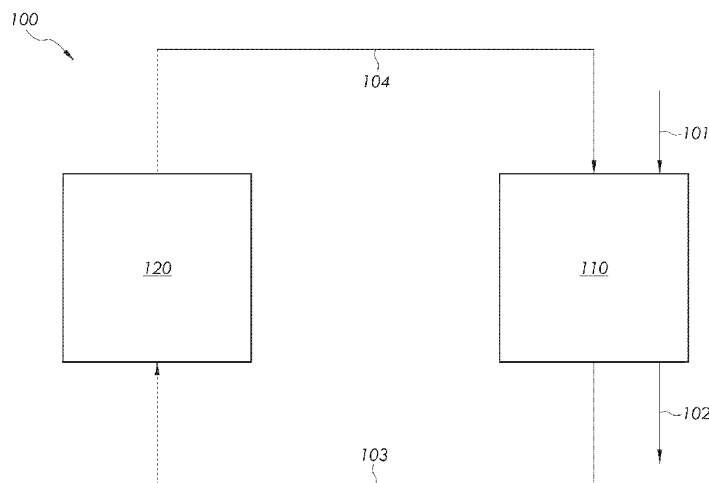


FIG. 1

(57) Abstract: According to one or more embodiments described herein, an oxygen carrier material may include a redox-active metal oxide and an alkali-including composition. The alkali-including composition may have the formula $\text{Na}_u\text{K}_v\text{Li}_w(\text{Si}_x\text{Al}_y\text{O}_2)_r$. In the formula the sum of u, v, and w may equal 1, the sum of x and y may equal 1, z may be greater than 1.5, and r may be from 0.02 to 20. A method of making an oxygen carrier material and a method of using an oxygen carrier material to produce olefinic compounds is also described herein.

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