

# (19) United States

## (12) Patent Application Publication (10) Pub. No.: US 2023/0230808 A1 Van Zyl

Jul. 20, 2023 (43) Pub. Date:

#### (54) SOLID-STATE MATCH (SSM)-GENERATOR SYNCHRONIZATION

(71) Applicant: Advanced Energy Industries, Inc., Denver, CO (US)

Inventor: Gideon Van Zyl, Fort Collins, CO (US)

Appl. No.: 18/097,909

Filed: Jan. 17, 2023 (22)

### Related U.S. Application Data

(60) Provisional application No. 63/300,100, filed on Jan. 17, 2022.

#### **Publication Classification**

(51) Int. Cl. H01J 37/32

(2006.01)

U.S. Cl. (52)

> CPC .... H01J 37/32183 (2013.01); H01J 37/3299 (2013.01); *H01J 37/32935* (2013.01)

(57)ABSTRACT

This disclosure describes systems, methods, and apparatuses for a power system comprising a generator connected to a solid-state match network and a synchronization module connected to the generator and the solid-state match network, wherein the synchronization module is configured to synchronize a power delivered by the generator to the match network with the opening and closing of switches in the solid-state matching network.

