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(54) **SEMICONDUCTOR DEVICE-BASED SENSORS**

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Ando, Y. et al., "10-W/mm AlGaN-GaN HFET With a Field Modulating Plate," IEEE Electron Device Lett. 24(5):289 (2003).

(52) **U.S. Cl.** **257/253**; 257/414; 435/180

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(58) **Field of Classification Search** 257/253,
257/258, 414; 435/180

See application file for complete search history.

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(57) **ABSTRACT**

Semiconductor device-based chemical sensors and methods associated with the same are provided. The sensors include regions that can interact with chemical species being detected. The chemical species may, for example, be a component of a fluid (e.g., gas or liquid). The interaction between the chemical species and a region of the sensor causes a change in a measurable property (e.g., an electrical property) of the device. These changes may be related to the concentration of the chemical species in the medium being characterized.

15 Claims, 5 Drawing Sheets

