

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): March 30, 2022

Odyssey Semiconductor Technologies, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or other Jurisdiction
of Incorporation)

333-234741

(Commission
File Number)

84-1766761

(I.R.S. Employer
Identification No.)

**9 Brown Road
Ithaca, NY 14850**

(Address of Principal Executive Offices)

Registrant's telephone number, including area code: **(607) 351-9768**

N/A

(Former Address of Principal Executive Offices)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation under any of the following provisions *see* General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Securities registered pursuant to Section 12(b) of the Act: None.

Section 7 – Regulation FD

Item 7.01. Regulation FD Disclosure

On March 30, 2022, Odyssey Semiconductor Technologies, Inc. (the “Company”) published a press release announcing that it has reached a technology milestone in its development of vertical proprietary Gallium Nitride (“GaN”) power field-effect transistors and received approval from the United States Patent and Trademark Office for a patent relating to a method of fabricating a high voltage switching device using GaN layers and materials.

A copy of the press release is furnished hereto as Exhibit 99.1. The information contained in this Current Report on Form 8-K (including the exhibits) is being furnished and shall not be deemed “filed” for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities of that Section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as otherwise expressly stated in such filing.

Section 9 – Financial Statements and Exhibits

Item 9.01. Financial Statements and Exhibits

(c) Exhibits

| Exhibit No. | Description |
|-------------|---|
| 99.1 | Press Release dated March 30, 2022 |
| 104 | Cover Page Interactive Data File, formatted in Inline XBRL document |

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: March 30, 2022

Odyssey Semiconductor Technologies, Inc.

By: /s/ Richard Brown
Name: Richard Brown
Title: Interim Chief Executive Officer



Odyssey Semiconductor Announces Technology Development Milestones

- *Demonstrates 700 Volt threshold in the Company's lab as part of vertical GaN device development*
- *New U.S. Patent issued - Validating novelty and establishing protection of the Company's vertical GaN device designs*

ITHACA, N.Y., March 30, 2022 -- Odyssey Semiconductor Technologies, Inc. (OTCQB: ODII), a semiconductor device company developing innovative high-voltage, vertical power switching components based on proprietary Gallium Nitride ("GaN") processing technology, today announced it has reached a technology milestone in its development of the world's most advanced vertical GaN power field-effect transistors (FETs).

Global sustainability trends require new technologies and approaches for power conversion in electric vehicles, solar and wind turbines, data centers and industrial motors. The trend to depart from traditional silicon-based transistors has been underway for over a decade – silicon can no longer meet the voltage and conversion efficiency demanded. Gallium-Nitride (GaN), deployed as lateral (or parallel) conduction FETs, provides efficiency improvements but fail to provide the voltage rating. Silicon Carbide (SiC) provides the voltage rating but falls short on efficiency. However, until Odyssey's recent innovation in vertical GaN, the performance and reliability of these new, predominant approaches have been insufficient.

Odyssey was founded to commercialize vertical GaN FETs. FETs that can provide the conversion efficiency of GaN with the higher voltage rating of SiC. The approach will lead to breakthrough performance for the most demanding applications.

Odyssey has now validated its approach at a 700 V rating while also providing industry-leading efficiency with and remarkably low on-resistance approaching $1\text{m}\Omega\text{-cm}^2$. These devices also exhibit very low gate leakage and can be operated in a mode where they are normally "off". Technology validation can begin on these 700 V devices while an extension of the same architecture to the next milestone of a 1200 V rating or better is completed.

Odyssey, with global headquarters in Ithaca, New York is developing this technology in their own manufacturing facility. As the U.S. needs to strengthen domestic semiconductor manufacturing, Odyssey is showing its commitment with its own wafer fabrication facility. This also streamlines the technology and product development processes with close collaboration between R&D and the fab.

The Company is also announcing today that the United States Patent and Trademark Office recently approved U.S. Patent 11,251,295, which issued February 15th, 2022, with respect to key aspects of Odyssey's vertical GaN technology. The Patent is entitled "Vertical field effect transistor device and method of fabrication" and relates to a method of fabricating a high voltage switching device using GaN layers and materials. Odyssey Semiconductor now has two issued U.S. patents, and has filed many other related claims for the vertical GaN device and related technology.

CEO Commentary

"This 700 V milestone validates our industry-leading efficiency and remarkably low on-resistance. Odyssey is on-track to deliver 1200 V vertical GaN FETs in 2022 for a handful of customers who have already requested engineering samples. We are thrilled the U.S. Patent and Trademark Office has granted our U.S. patent. This strengthens Odyssey Semiconductor's leadership position in vertical GaN devices and related technology," said Rick Brown, co-founder, interim CEO, CTO, and Board member. "Our patent is one of many that will help protect Odyssey's key aspects on our GaN devices."

"Our goal is to fully protect our GaN devices using both patent rights and trade secrets," concluded Brown.

About Odyssey Semiconductor Technologies, Inc.

Odyssey Semiconductor Technologies, Inc. (www.odysseysemi.com), has developed a proprietary technology that is designed to allow for GaN to replace SiC as the leading high-voltage power switching semiconductor material. Based in Ithaca, NY, the Company owns and operates a 10,000 sq. ft. semiconductor wafer manufacturing facility complete with a mix of class 1,000 and class 10,000 clean space as well as tools for advanced semiconductor development and production. Odyssey Semiconductor also offers a world-class semiconductor device development and foundry service.

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