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## **Development of a GaN FETs based fully digital correction magnet power supply platform for taiwan photon source**

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Since its operation in 2013, Taiwan Photon Source (TPS) has been constantly maintaining and developing new technologies to improve its power electronics systems. The availability of GaN FETs power devices with integrated drivers and protection functions has allowed designers to achieve new levels of power density and efficiency in these systems. This paper explains how to use GaN FETs for power supply development and PCB design, and how to incorporate them into the TPS correcting magnet power supply architecture, using a TI TMS320F28335 controller and GaN FETs power modules to increase output current band-width, complete PI compensation algorithms, high switching frequencies, PWM switching modes, and communication functions. Finally, we implemented a GaN FETs based fully dig-ital TPS correction magnet power supply development platform, which provides strong support for future development of new TPS correction magnet power converters.

### **Funding Agency**

### **Footnotes**

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Yes

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