**Claibourne Countess,** [**cdc77@pitt.edu**](mailto:cdc77@pitt.edu)**, Mandala, 2:00**

**Avery Peiffer,** [**aep65@pitt.edu**](mailto:aep65@pitt.edu)**, Mandala, 2:00**

**ANNOTATED BIBLIOGRAPHY**

S. Colino, R. Beach. “Fundamentals of Gallium Nitride Power Transistors.” Efficient Power Conversion Corporation. Accessed 1.14.2018. S. Colino, R. Beach. “Fundamentals of Gallium Nitride Power Transistors.” Efficient Power Conversion Corporation. Accessed 1.14.2018. <http://epc-co.com/epc/Portals/0/epc/documents/product-training/appnote_ganfundamentals.pdf>

This article, written by a company specializing in the development of gallium-nitride transistors, outlines the various measures by which gallium-nitride’s performance is measured. The article compares gallium-nitride and silicon transistors in the aspects of gate threshold, resistance, capacitance, and series gate resistance. We plan to use this source as a foundation in our research into the electrical properties of these transistors.

Y. Hatakeyama, et al. “High-Breakdown-Voltage and Low-Specific-on-Resistance GaN p-n Junction Diodes on Free-Standing GaN Substrates Fabricated Through Low-Damage Field-Plate Process.” Japanese Journal of Applied Physics. Published 1.30.2013. Accessed 1.27.2018. <http://iopscience.iop.org/article/10.7567/JJAP.52.028007/pdf>

This article, from the Japanese Journal of Applied Physics, outlines recent findings regarding the fabrication of gallium-nitride bipolar transistors on gallium-nitride substrates. The article details the improvements in the breakdown voltage and on-resistance values of the new transistors due to the change in structure. We plan to cite this article in a detailed explanation of the creation of gallium-nitride transistors.

“Semiconductor Manufacturing: How a Chip is Made.” Texas Instruments. Accessed 1.12.2018. <http://www.ti.com/corp/docs/manufacturing/howchipmade.shtml>

This article details the chemical processes by which one of the leading companies in the semiconductor industry turns raw materials into a silicon-based integrated circuit, going through each step necessary to alter the electrical characteristics of the element. We intend to devote a significant portion of our paper to the process used to create gallium-nitride transistors, meaning this article will serve as an appropriate comparison to information gathered from our research.

S. Davis. “GaN Basics: FAQs.” Power Electronics. Published 10.02.2013. Accessed 1.14.2018. <http://www.powerelectronics.com/gan-transistors/unique-driver-architecture-enhances-gan-based-isolated-power-supply-designs>

This article, from a news website specializing in the design and implementation of power electronics systems, gives an overview of gallium-nitride transistors in a focused manner. The article answers basic technical questions pertaining to gallium-nitride transistors through the use of schematics and equations. Information gathered from this article will give us a strong foundation of knowledge on our topic and highlight areas to research in greater detail.