World Academy of Science, Engineering and Technology
International Journal of Materials and Metallurgical Engineering
Vol:17, No:01, 2023

# Current of Drain for Various Values of Mobility in the Gaas Mesfet

**Authors :** S. Belhour, A. K. Ferouani, C. Azizi

**Abstract :** In recent years, a considerable effort (experience, numerical simulation, and theoretical prediction models) has characterised by high efficiency and low cost. Then an improved physics analytical model for simulating is proposed. The performance of GaAs MESFETs has been developed for use in device design for high frequency. This model is based on mathematical analysis, and a new approach for the standard model is proposed, this approach allowed to conceive applicable model for MESFET's operating in the turn-one or pinch-off region and valid for the short-channel and the long channel MESFET's in which the two dimensional potential distribution contributed by the depletion layer under the gate is obtained by conventional approximation. More ever, comparisons between the analytical models with different values of mobility are proposed, and a good agreement is obtained.

**Keywords :** analytical, gallium arsenide, MESFET, mobility, models
**Conference Title :** ICCMPA 2023 : International Conference on Condensed Matter Physics and Applications
**Conference Location :** Rome, Italy
**Conference Dates :** January 16-17, 2023