Project Title: Investigation of Tunneling in GaAs/AlGaAs asymmetric double quantum wells (ADQW)

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Designation of Proponent: Associate Professor 1

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Project Abstract:

Tunneling through a barrier is a topic of interest because of its implications in the dynamics of the processes in a material system and its application in modern semiconductor devices. Tunneling through a barrier is usually observed experimentally in specially designed semiconductor quantum wells called the asymmetric double quantum wells (ADQW).

This project aims to investigate experimentally the process of tunneling through a quantum barrier in a gallium arsenide (GaAs)/aluminum gallium arsenide (AlGaAs) ADQW well system. The tunneling effect can be observed by measuring the characteristic tunneling time constant of electrons in the quantum well. We will investigate the tunneling effects in such systems via time resolved photoluminescence spectroscopy (TRPL).

Funding Support in Philippine Pesos: PhP 300,000

Duration and Status: 12 months

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