**Enhancing OLED Efficiency with Machine Learning**

I am an undergraduate Physics student at COMSATS University Islamabad. Working on a multidisciplinary final year project titled **“Enhancing the Efficiency of Light Emitting Diodes Using Machine Learning.”** This work bridges the gap between material science and artificial intelligence by predicting OLED performance using real experimental data.

The project focuses on polymer blend-based OLEDs and their physical parameters such as HOMO, LUMO, bandgap, thickness, and blend ratios. I developed a predictive machine learning model (Random Forest) and a user-friendly Streamlit app that allows users to input material properties and receive instant predictions for EQE, lifetime, and efficiency.

This project highlights how physics and machine learning can work together to accelerate material discovery and improve device design. It serves as a model for future research in developing more energy-efficient OLED technologies.

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