



**Design, Growth and Characterisation of Resonant
Cavity Light Emitting Diodes (RCLEDs) for Mid-infrared
Applications**

Furat A. Mahdi Al-Saymari

B.Sc., M.Sc.

Supervisor: A. Krier

This thesis is submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

In physics

Department of Physics

Lancaster University

United Kingdom

September 2020