MONASH University Engineering

Summer Research Experience Program

PROJECT TITLE Photonic Signal Processing of RF Signals

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Any pre-requisite subjects: ECE3022 and ECE2011

The Problem

Identification of RF signals is very important in high-speed microwave spectrum, e.g. in aircraft, fighter airplanes etc. These RF signals can be in the microwave or mm-wave regions and processing cannot be implemented in these spectra due to space and weight of equipment. Processing in the photonic domain is preferred.

The Project

This project explores the design of signal filtering by converting the baseband RF signals to the optical passband domain then the processing is conducted in this domain. The project involves:

(1) Analysis and design of fibre-based optical processors using discrete signal processing techniques
(2) Construction of the designed processors
(3) Testing and characterization of the processors

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