**LAB 3 : Analog-to-Digital Converter (ADC)**

**The Stellaris ADC module provides the following features:**

■ Four analog input channels

■ Single-ended and differential-input configurations

■ On-chip internal temperature sensor

■ Sample rate of 500 thousand samples/second

■ Flexible, configurable analog-to-digital conversion

■ Four programmable sample conversion sequences from one to eight entries long, with

corresponding conversion result FIFOs

■ Flexible trigger control

– Controller (software)

– Timers

– Analog Comparators

– PWM

– GPIO

■ Hardware averaging of up to 64 samples for improved accuracy

■ Converter uses an internal 3-V reference

■ Power and ground for the analog circuitry is separate from the digital power and ground

**In this lab, we will learn**

* The configuration of ADC
* The use of ADC to detect the internal temperature of Stelaris KIT

**Basic Lab**

1. Measure the temperature of Stelaris every second using the temperature sensor inside ADC10. And display on Graphic LCD.
2. Measure the Votage of Generator ( 0V – 20V)