inductor current enters CCM for a few switching cycles, causing discrepancy from calculations.

**Figure 4.8** The simulation results of PWM boost PFC with open loop control.
a.) Rectified input voltage and output voltage.

b.) Input current and a zoom in view.

Figure 4.9 The simulation results of PWM flyback PFC with open loop control.
Figure 4.10 The simulation results of hysteretic boost PFC with closed loop control

a.) Rectified input voltage and output voltage.

b.) Input current and a zoom in view.
Figure 4.11 The variation of power factor with different inductance and input voltages, Blue line: Circuit simulations, Red line: Theoretical calculation.
Figure 5.9  Power spectrum of the filtered input current for $120V_{RMS}$ input voltage, a.) PWM boost,  b.) PWM flyback and  c.) Hysteretic boost.
Figure 5.10  Power spectrum of the filtered input current for $220V_{RMS}$ input voltage, a.) PWM boost,  b.) PWM flyback and  c.) Hysteretic boost.
Figure 5.11  Comparison of the low frequency harmonics components,  a.)PWM boost PFC  b.)PWM flyback PFC.
Figure 6.1  The equipment setup for power factor and power spectrum measurement.

Figure 6.2  Photograph of the measurement setup and the testing breadboard.
Figure 6.3 The frequency response of the EMI filter.
Figure 6.4  The measured input current waveform of PWM boost PFC with $120V_{RMS}$ input, (scale: 500mA/division).
Figure 6.5  The measured input current waveform of PWM boost PFC with $220V_{RMS}$ input, (scale: 500mA/division).
Figure 6.6 The measured input current waveform of hysteretic boost PFC with 120$V_{RMS}$ input, (scale: 500mA/division).

Figure 6.7 The measured input current waveform of hysteretic boost PFC with 220$V_{RMS}$ input, (scale: 500mA/division).
Figure 6.8  Measured input current of the PWM boost PFC after the EMI filter.

Figure 6.9  The filtered input current of the hysteretic PFC.