

# **Abstract**

**Moustafa Hussein Aly**

## **Gain and Noise Performance of Fiber Raman Amplifiers**

This work presents a study to obtain the gain and noise figure of fiber Raman amplifiers (FRAs) by the two coupled equations of Raman-amplification process. The effects of pump power and length are investigated as well as the noise transferred between pump and signal. Relative intensity noise (RIN) is also studied showing the effect of Raman on-off gain and dispersion. Three different amplifier configurations are considered using three different fiber types.