

# **Abstract**

**Moustafa Hussein Aly**

## **Optical signal buffering using fiber Bragg gratings in all optical networks**

All Optical Networks (AONs) are considered the future scenario for core networks. One of the major problems in AON is resources contention. One of the ways to solve this is buffering. This paper demonstrates a tunable optical buffer using an array of uniform fiber Bragg gratings (FBGs) and tunable wavelength converters (WCs). An enhancement to the system is achieved using chirped FBG to compensate dispersion and erbium doped fiber amplifier (EDFA) to overcome attenuation of the system. The simulation shows improvement in many parameters such as quality factor and bit error rate (BER). Also, a better network utilization and shorter fiber delay line (FDL) by 50% are achieved.