**ABSTRACT**

Data Communication using a Light Fidelity(Li-Fi) system, was proposed by a German physicist—Harald Haas who worked on Visible Light Communication(VLC). It provides transmission of data through illumination by sending data via an LED light source that varies in intensity that can be controlled and adjusted such that it appears as normal light to the naked human eye. Here the property of persistence of vision of the human eye is exploited for additional application of a free, sustainable and green source that can be used for wireless communication at very fast data rates. This report focuses on developing a low cost Li-Fi based system and analyses its performance with respect to existing wireless technology. Li-Fi is ideal for high density wireless data coverage in confined area and for relieving radio interference issues. These systems provide better bandwidth, efficiency, availability and security than Wi-Fi and have already achieved higher data rates. By leveraging the low-cost nature of LEDs and lighting units there are many opportunities to exploit this medium, from public internet access through day-to-day light sources which have their primary purpose of only emitting light. This project envisions a future where data for communication devices will be transmitted through the visible spectrum thus de-clogging the currently overused RF spectrum.