LI-FI: ILLUMINATING THE FUTURE OF WIRELESS COMMUNICATION

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IN the ever-evolving sphere of technology, innovation knows no bounds. One such innovation that has gained pace in recent years is Light Fidelity or Li-Fi. This is an inventive wireless communication technology that uses light to transmit data, offering a multitude of advantages over traditional Wi-Fi.

Li-Fi was first introduced in 2011 by Harald Haas, a professor at the University of Edinburgh. Prof. Haas showcased the potential of Li-Fi during a TED Global talk, demonstrating the concept by transmitting data through a simple LED (Light-emitting Diode) light bulb. This revolutionary idea quickly caught attention for its potential to revolutionise wireless communication.

How does Li-Fi Work?

At its core, Li-Fi operates by modulating the intensity of visible light to transmit data. It has the following components that work together to achieve this goal:

- **LED Lights:** Li-Fi primarily uses LED light bulbs, easily available in our homes, offices, streetlights, car headlights, etc.
- **Data Modulation:** within an LED bulb, a microchip modulates the light at incredibly high speeds, often invisible to the human eye. This modulation encodes data in binary code, where on-off patterns generate zeroes and ones, similar to the Wi-Fi encoders that encode data using radio waves.