

TECH SCAN

Li-Fi



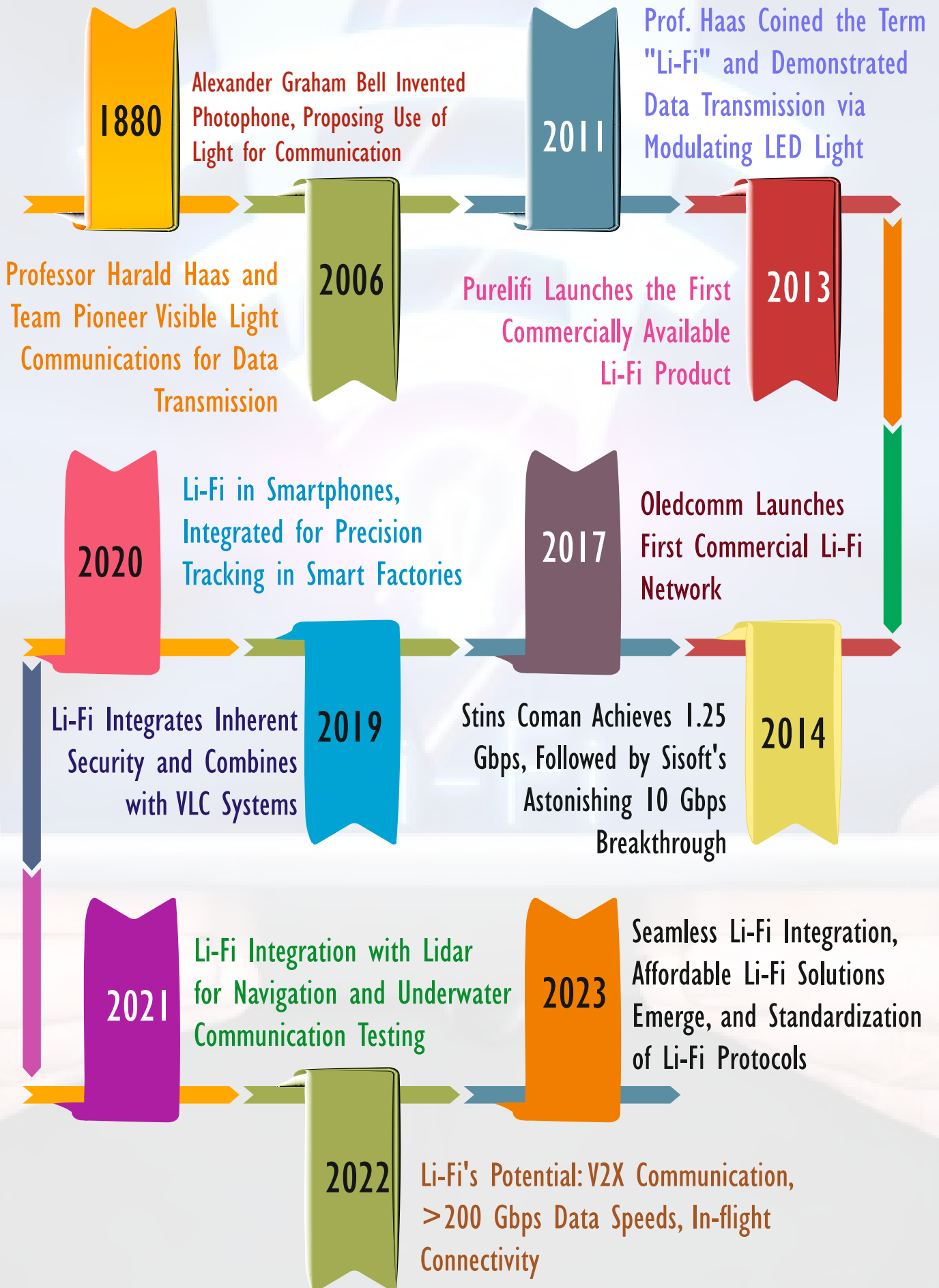
In a time of lightning-fast electronic advancement, Li-Fi is an explicit visible light communications system that has emerged as a game-changing technology. It is a bidirectional wireless system that modifies visible light with data transmission via photodetectors, which offers elevated speeds and efficient connectivity and revolutionizes how we interact in our digital world.

Nowadays, patents are actively pursued to pioneer ground-breaking innovations in Li-Fi, comprising effective transmission of information protocols, dynamic modulation strategies, and seamless technology integration. These technological innovations have become vital for addressing the rising demand for secure, resilient, and effective wireless communication as well as boosting the speed of data transfer.

The evolution of Li-Fi is a vital move towards a technology environment that is more adaptive and connected. In exploring the communication landscape, Li-Fi has the potential to not only meet but also surpass the constraints presented by conventional wireless communication techniques, illuminating the path towards a more resource-aware, productive, and brighter digital future.



INNOVATION TIMELINE



PATENTABLE COMPONENTS

There are several elements in Li-Fi or Light Fidelity that could potentially qualify for patent protection. Frequently, the following domains are examined for patentability.

SOFTWARE

- Li-Fi Network Management
- Security Protocols
- Signal Protocol Algorithms

SYSTEM INTEGRATION

- Li-Fi / Wi-Fi Hybrid.
- Underwater Li-Fi Communications
- Li-Fi Enabled Medical Devices

USER INTERFACES

- User-friendly Interfaces
- Connectivity Solutions

Li-Fi APPLICATIONS

- Healthcare
- Automotive
- Internet of Things (IoT)

DATA COMMUNICATIONS

- Data Transmission Technique
- System for Communication
- Data Communication Algorithms

Li-Fi POWER MANAGEMENT

- Energy Efficient Components

Li-Fi MODULE

- LEDs
- Photodetector
- Chips

Li-Fi DEVICE

- Li-Fi Transmission Module
- Li-Fi Receiver Module

CONTROL MODULE

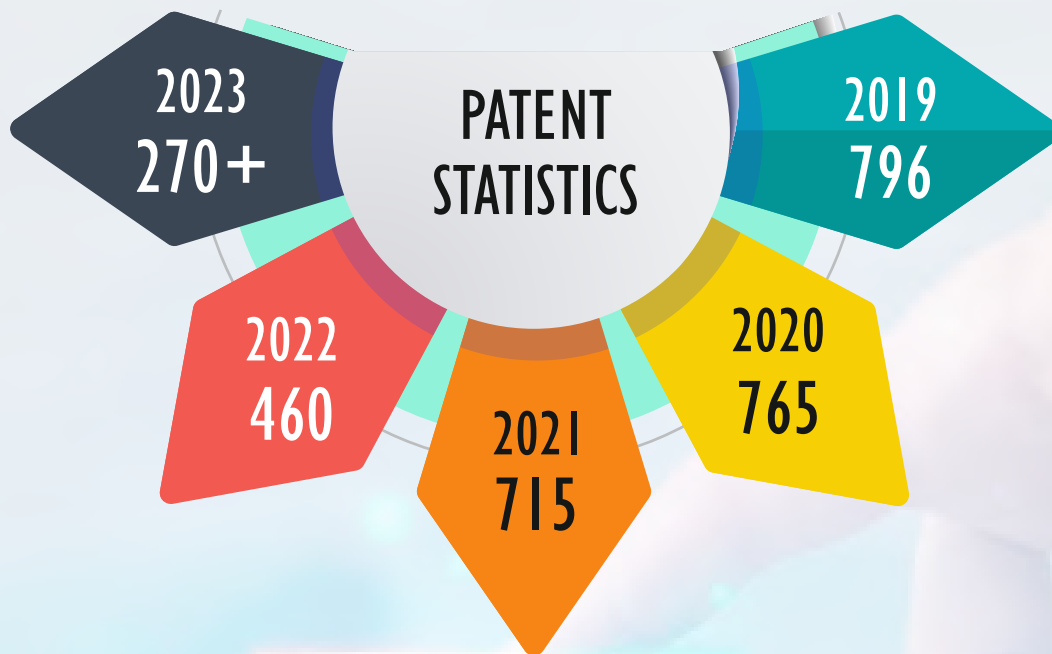
MACHINE LEARNING

- AI-powered Algorithms
- Personalized Streaming

Li-Fi SENSORS

Li-Fi ROUTER

Li-Fi ACCESS POINTS



TOP APPLICANTS

115 Signify Holding

Guangdong Oppo Mobile Telecommunications 113

73 Chitkara Innovation Incubator Foundation

South China University of Technology 55

41 Nanchang University

Nanjing University of Posts & Telecommunications 39

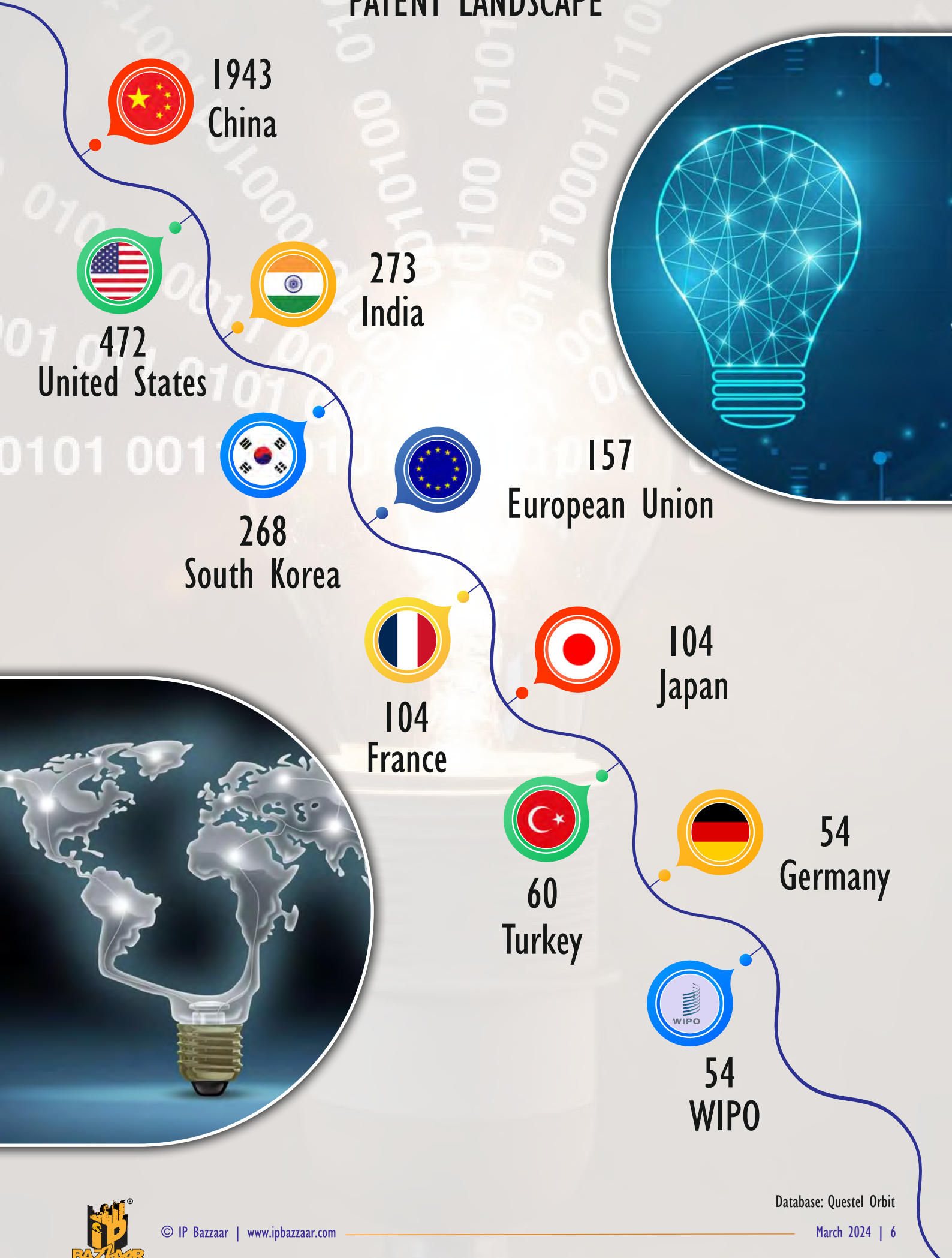
38 Southeast University

Samsung Electronics 37

36 Gopro

Panasonic Intellectual Property Management 31

PATENT LANDSCAPE



Database: Questel Orbit

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NOTABLE INNOVATIONS

The inception of Li-Fi can be traced back to Alexander Graham Bell's invention of the "PHOTOPHONE", a pioneering device that transmitted sound using a beam of light. This groundbreaking invention marked a milestone in the evolution of wireless communication.

Bell, Alexander Graham. "The photophone." Science 11 (1880): 130-134.

Patent Application	Priority Date	Title	Assignee
CN115603810	Sep 30, 2022	Underwater Fish School Monitoring Statistical System Based on Blue-Green Light Lifi	Fuzhou Collaborative Innovation Tech Co. Ltd.
W02023219660	May 09, 2022	Wireless Architectures for Surgical Robotic Systems	Covidien LP
CN113589524	Oct 8, 2021	Design Method of Holographic Grating Optical Waveguide Plane Condensation System for Lifi Communication	Nanchang University
W02023015539	Aug 13, 2021	Techniques for Visible Light Communication-assisted Broadcast Transmissions	Qualcomm Inc, Wei Chao, Xu Hao, Liu Kangqi
W02022236343	May 04, 2021	Wo-Mode Smart Lighting System for Rf and Lifi Data Transmission, and Lifi Light Modulation Method on Three Parallel Data Streams Using both Visible and Infrared Lights	Anh Sang So Huepress Joint Stock Compavny
W02021094187	Nov 5, 2020	Control Module for a Lifi Network	Signify Holding B.V.
W02021089492	Nov 5, 2019	A Lifi Device	Signify Holding B.V.
W02021017831	July 29, 2019	Lifi Communication Control Method and Apparatus, Transmission End, and Mobile Terminal	Guangdong Oppo Mobile Telecommunications Corp Ltd.
CN109618220	Dec 25, 2018	Miracast Method and Miracast Systems	Samsung Electronics Co., Ltd.
US20200021359	Jul 10, 2018	Visible Light Communication Sensor and Visible Light Communication Method	Guangzhou Tyrafos Semiconductor Technologies Co., Ltd.

WHITE SPACE

Li-Fi in Remote Face
Recognition

Li-Fi enabled Construction
Machinery System

Li-Fi VR Headset
Assembly

Seat with Li-Fi
Data Module

Li-Fi Enabled Smart
Navigation System

Smart Vehicles
Based on Li-Fi

Smart Home Automation
Coordination via Li-Fi

Li-Fi Image
Streaming Prototype
with Raspberry PI

Li-Fi Hospital Monitor
without Frequency
Interference

Light Fidelity Based
Wireless CCTV System

Li-Fi-Enabled Security
System

Driving Assistance
System

Li-Fi Smart Glasses to Initiate
Card to Card Transaction

Traffic Information Collection
System Using Li-Fi

Intelligent Lighting
Systems Using Li-Fi

Low Cost Li-Fi
Solutions

Simultaneous Multi-User
Communication in Li-Fi Networks

Advanced Modulation Techniques
for Efficient Data Transmissions

Li-Fi-Based Shipborne and
Diving Communicators

Li-Fi Equipped Diving Mask



If you would like to learn more about any of these areas or have specific questions, we're here to provide further information and insights. Our team is dedicated to driving progress and staying at the forefront of Li-Fi Technology.

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