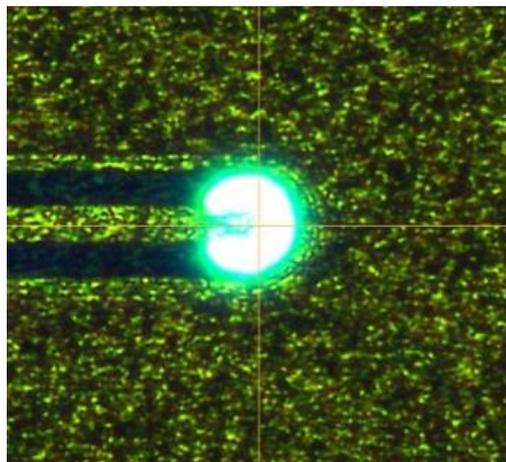


Kubos Semiconductors Sheds New Light on High-Speed Communications with Sustainable LEDs

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For immediate release: Kubos Semiconductors Ltd, the developer of LEDs based on cubic Gallium Nitride (GaN), in collaboration with researchers at Manchester and Cambridge Universities, have identified the potential for Kubos' proprietary material to deliver LEDs capable of switching at significantly faster speeds than those produced in the hexagonal crystal phase. Carrier lifetimes in cubic GaN quantum wells have been measured at <0.5ns, which is more than 20 times faster than typical c-plane hexagonal GaN LEDs (≈ 10 ns). These shorter carrier lifetimes along with other beneficial properties of cubic GaN offer the potential to develop LEDs across the visible spectrum which can be switched at very high speeds (>1GHz).

Prof. David Wallis, Technical Director, and founder of Kubos stated: "These measurements suggest cubic GaN LEDs could be used in visible light communications (VLC) applications enabling higher speed connectivity, and we are already seeing some early commercial interest in this area".



Kubos 25µm (radius) cubic GaN LED, with a quantum well peak in the 'green gap'

Kubos is developing its cubic GaN technology to produce improved efficiency green and amber LEDs and red microLEDs for a range of lighting and display applications and its potential to significantly reduce carbon emissions attributable to solid state lighting is widely

acknowledged. Kubos has calculated, this could save as much as 120Mtons of CO₂ emissions on an annualised basis, which is equivalent to the emissions of 32 coal-fired power stations each year. But the possibility of playing an additional role in delivering faster switching speeds in communications applications is ground-breaking.

Caroline O'Brien, CEO of Kubos said: "The communications sector of the LED market is a progressive and exciting application area. The opportunity to significantly improve LiFi and electronic optical backplane communication speeds, for example, opens a whole new segment for Kubos in an already large and growing addressable LED and microLED market".

According to data published by [MarketsandMarkets](#) in November 2020, the VLC market is expected to grow to USD 80.3 billion by 2025 and they have listed 'less energy consumption by LEDs' as one of the key factors to fuel this growth.



Editor notes about Kubos Semiconductors:

Founded in Cambridge in 2017, as a university spin-out, to develop and commercialise its proprietary cubic GaN IP through the development of LEDs, Kubos employs a fab-less semiconductor model in its development process and is developing devices on a Silicon platform which is compatible with large area, low-cost manufacturing. In February 2021, Kubos announced the first commercially compatible LEDs based on the cubic crystal phase of GaN. Kubos plans to license its technology to major manufacturers for LED and microLED applications, including lighting, displays, AR/VR, communications, automotive and horticulture.

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