

The world needs engineers equipped for impact

Empower engineering excellence and help spark new, novel ideas

Compendex + Patents Plus on Engineering Village

As the research landscape changes, so must our engineering resources. Engineering Village now offers its users the option to search both Compendex and 120 million patent records across an expanded list of patent resources. The result? A unique experience whereby engineering researchers can validate the novelty and research impact of their next bright idea.



Search across
120 million
patent records
on Engineering
Village, including:

- United States Patent Office (USPTO)
- World Intellectual Property Office (WIPO)
- European Patent Office (EPO)
- Japanese Patent Office (JPO)
- China National Intellectual Property Administration (CNIPA)
- UK Intellectual Property Office (IPO)
- Deutsches Patent- und Markenamt (DPMA)

Why search engineering literature and patent records together?

- Improved **efficiency**: One search query + one platform = one comprehensive and contextualized list of results bridging the gap from theory to application
- Enhanced **discoverability**: Using controlled vocabulary, subject indexing terms from Compendex have been added to the patent records, making them easier to search, understand, and synthesize what has been developed and validate the novelty of your next idea.
- **More relevant, reliable results**: Reduce your risk of missing key content from either the literature or the patent records and identify opportunities for innovation based on current gaps.
- Opportunities for **collaboration**: Identify the key companies or researchers with whom you can collaborate.

The ultimate goal? Find your next sweet spot, a novel idea that's never been done before.

US 20200328326 A1

(19) United States
(12) Patent Application Publication
(43) Pub. No.: US 2020/0328326 A1
(43) Pub. Date: Oct. 15, 2020

(54) MONOLITHICALLY INTEGRATED INCA/NAN QUANTUM NANOWIRE DEVICES

(71) Applicant: The Regents of the University of Michigan, Ann Arbor, MI (US)

(72) Inventors: Zetian MI, Ann Arbor, MI (US); Yong-Lo RA, Montreal (CA); Renjie WANG, Montreal (CA)

(21) Appl. No.: 16/912,372
(22) Filed: Jun. 25, 2020

Related U.S. Application Data
(63) Continuation of application No. 15/029,715, filed on Jun. 21, 2017, now Pat. No. 10,734,545.

Publication Classification
(51) Int. Cl. H01L 33/06 (2006.01) H01L 33/32 (2006.01)

(52) U.S. CL. CPC H01L 33/06 (2013.01); H01L 33/32 (2013.01); H01L 33/0625 (2013.01); H01L 33/24 (2006.01); H01L 27/15 (2006.01); H01L 33/18 (2006.01); H01L 33/06 (2013.01); H01L 33/0625 (2013.01); H01L 33/24 (2013.01); H01L 33/06 (2013.01); H01L 33/0625 (2013.01); H01L 27/15 (2013.01); H01L 33/18 (2013.01); H01L 27/15 (2013.01)

(57) ABSTRACT
InCaN/GaN quantum layer nanowire light emitting diodes are fabricated into a single cluster capable of exhibiting a wide spectral output range. The nanowires having InCaN/GaN quantum layers formed of quantum dots are tuned to different output wavelengths using different nanowire diameters, for example, to achieve a full spectral output range covering the entire visible spectrum for display applications. The entire cluster is formed using a monolithically integrated fabrication technique that employs a single-step selective area epitaxy growth.

Enhanced
discoverability
of patents thanks
to common
subject indexing:

Gallium nitride
II-V semiconductors
Nanocrystals
Organic light emitting
diodes OLED
Semiconductor
quantum dots

Contents lists available at ScienceDirect

Optical Materials

journal homepage: www.elsevier.com/locate/optmat

Research Article

Color-tunable quantum-dot light emitting diode and its integration with GaN-based blue LED for smart white-light emission

Jinyu Ye^a, Sihua Que^a, Yibin Lin^a, Liming Wei^a, Xiongdu Zhou^{a,b,*}, Tailiang Guo^{a,b}, Jie Sun^{a,b}, Qun Yan^{a,b}, Yongai Zhang^{a,b,*}, Chaoping Wu^{a,b,*}

^a College of Physics and Information Engineering, Puzhou University, Puzhou, 325010, PR China
^b Fujian Science & Technology Innovation Laboratory for Optoelectronic Information of China, Puzhou, 350108, PR China

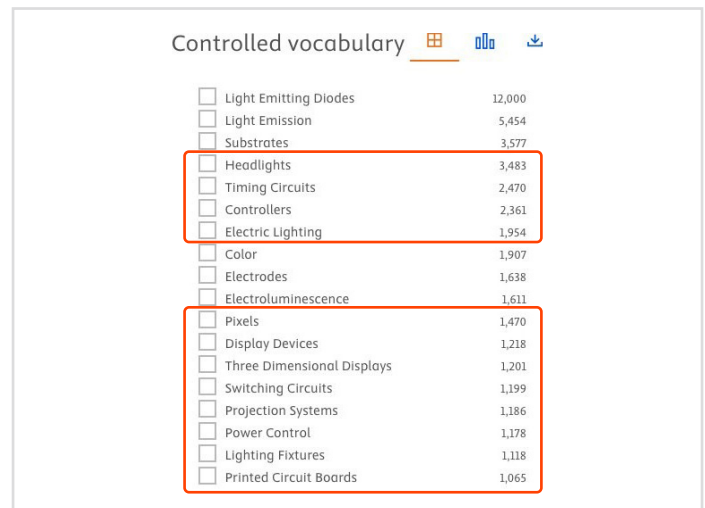
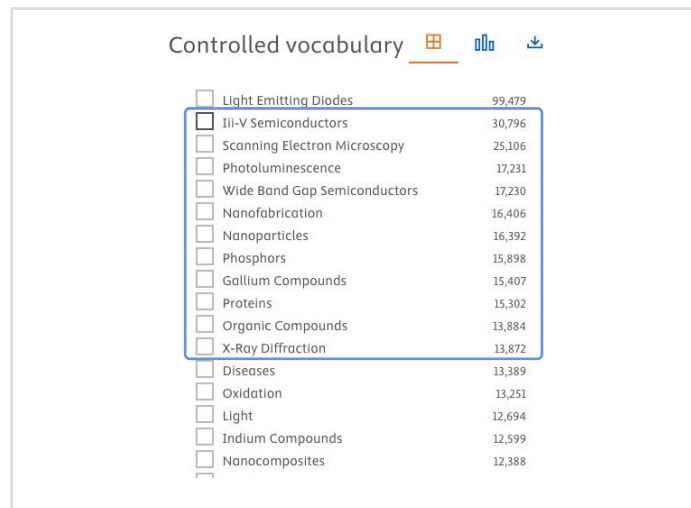
ARTICLE INFO

Keywords:
QLED
Micro-LED
Color-tunable
Correlated color temperature
White-light emission

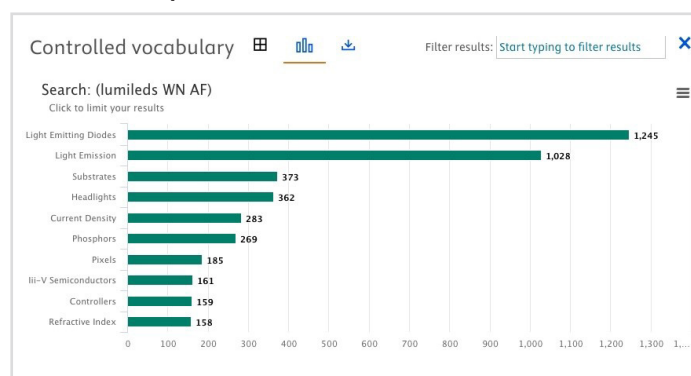
ABSTRACT
White-light emission with tunable color temperature have potential applications in the fields of smart lighting and backlight. In this study, we introduced an electron blocking layer (EBL) between red and green emission layers (EMs) in a quantum-dot light-emitting diode (QLED). The emitting color of QLED can be tuned from red to green as the carrier distribution and recombination region are regulated by the applied voltage. In addition, the color tunable QLED device was integrated with a GaN-based blue light emitting diode (LED), achieving a

Example search for LED on Engineering Village with Patents Plus:

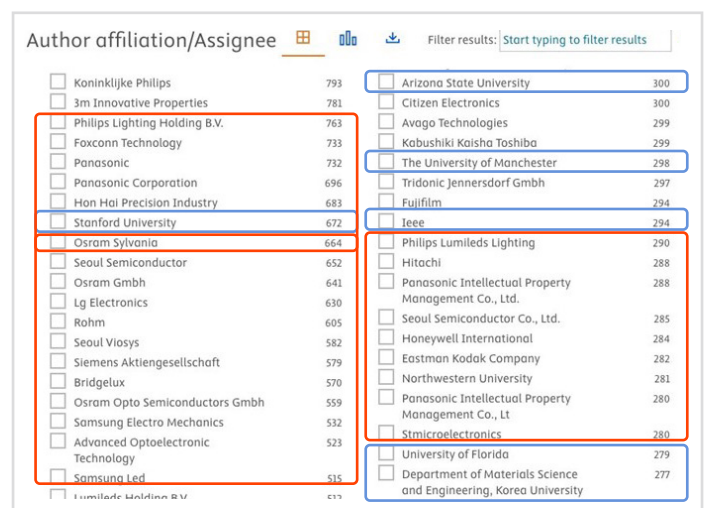
Gain insights from both academic research and commercial R&D. Compendex results (left) help you understand LED materials and performance whilst patent results (right) provide insight into practical applications and functioning of LEDs.



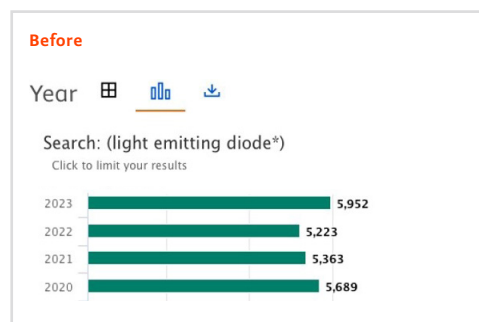
Search for a company or inventor to quickly see the subject indexing associated with their academic literature and patents:



The expanded patent view helps you find potential collaborators across both industry and academia:



Improved patent recall with subject indexing from Compendex:



For more information, visit elsevier.com/products/engineering-village

Engineering Village is a trademark of Elsevier B.V.
Copyright © 2024, Elsevier. October 2024