



QEOS
TECHNOLOGY
THAT CONNECTS

About Us

Corporate Profile



Quantum Electro Opto Systems Sdn. Bhd. (QEOS) was founded in 2008 by three researchers from the University of Illinois Urbana-Champaign to pioneer the commercial development of high speed, low cost and power efficient fiber optics communication solutions based on the Tilted Charge Dynamics technology platform. QEOS founders include distinguished inventor Professor Nick Holonyak Jr., who is widely regarded as the inventor of the Light Emitting Diode (LED) and has invented many other inventions that have enabled much of the opto-electronics industry as we know it today.

The Tilted Charge Dynamics technology, forms the core of the QEOS multi-gigabit, low cost, low power consumption technology. By utilizing commercial GaAs-HBT foundry facilities and processes, QEOS is able to quickly scale volume production and enable sophisticated, customizable solutions that could integrate optical, electronics and RF wireless functions into a single chip.

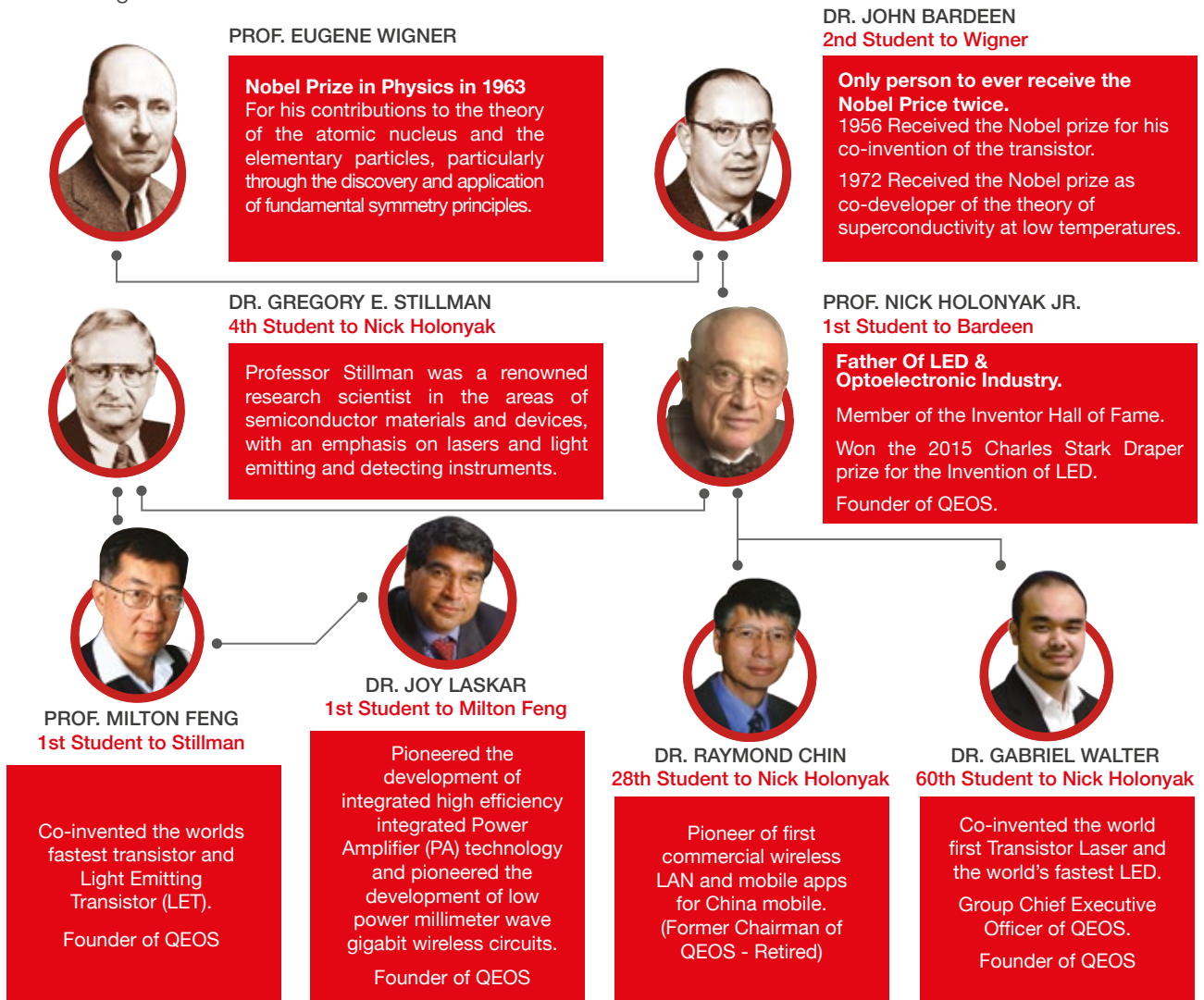
For example, through the integration of multiple functions, QEOS optical transmitter eliminates the need for external driver and control circuitries, allowing ultra-small form factor gigabit speed optical transmitter solutions that consumes less than 1mW/Gbps. The availability of low cost

multi-gigabit optical interconnects using the Tilted Charge Dynamics platform can address a number of very large opportunities.

These include interconnects used for data centers, for supercomputing, factory floor and in high definition video security. It can also address consumer market applications to interconnect HDTVs, PCs, and mobile devices. These are high volume, high value markets that offer major growth opportunities for the company.

QEOS has offices in Cupertino, California, USA, located in Silicon Valley and in Melaka, Malaysia. QEOS was initially supported by MOSTI Brain Gain Malaysia Diaspora program. Venture capital was provided by Kumpulan Modal Perdana and First Floor Capital. Additional investment has been provided by Agensi Inovasi Malaysia. The company has also been supported by the Malaysian Industrial Development Authority (MIDA) R&D program and the Malaysian MOSTI Technofund program. The company is headquartered at Batu Berendam, FTZ, Melaka, Malaysia.

About Us
QEOS Origins



TIMELINE

- 1930** Eugene Wigner was recruited into Princeton University for professorship.
- 1933** John Bardeen was referred by Albert Einstein to enter Princeton's graduate program in mathematics. He became Wigner's second graduate student.
- 1947** John Bardeen invented the transistor.
- 1951** Bardeen moved to Illinois, became the Professor of Electrical Engineering and of Physics at Illinois.
- 1954** Nick received his undergraduate, master's, and Ph.D. He is the first graduate student of Professor John Bardeen.
- 1962** Nick Holonyak invented the Light-Emitting Diode (LED).
- 1963** Nick Holonyak joined Dr. Bardeen at the University of Illinois and worked on Quantum Wells and Quantum-Well Lasers.
- 1967** Gregory E. Stillman earned his Ph.D. under the direction of ECE Professor Nick Holonyak Jr.
- 1975** Stillman joined the Illinois ECE faculty.
- 1979** Milton Feng received his Ph.D. in Electrical Engineering from the University of Illinois under the supervision of Professor Gregory E. Stillman.
- 2003** Gabriel Walter received his Ph.D. Degree in Electrical Engineering from the University of Illinois as the last student of Professor Nick Holonyak Jr.
Prof. Nick Holonyak Jr. & Prof. Milton Feng co-invented Light Emitting Transistor.
- 2004** Prof. Nick Holonyak Jr., Dr. Gabriel Walter, Prof. Milton Feng Co-invented Transistor laser.
- 2008** QEOS founded by Prof. Nick Holonyak Jr., Dr. Gabriel Walter, Prof. Milton Feng.
- 2009** QEOS demonstrated the fastest LED in the world.

About Us

Funders & Investors



Agensi Inovasi Malaysia (AIM)

Agensi Inovasi Malaysia (AIM) was created to jump start wealth creation through knowledge, technology and innovation to stimulate and develop the innovation eco-system in Malaysia. They facilitate collaborations between government, academia and industry in advancing the consolidation and execution of new ideas in innovation.



FIRSTFLOOR CAPITAL

FirstFloor Capital

FirstFloor Capital is a Growth Investment Firm with experience in entrepreneurship, technology and investment banking that manages both private and institutional funds and invest mainly in high-growth and technology companies in industries ranging from information technology, E&E, services, communications to life science.



Ministry Of Science Technology And Innovation

The Ministry was first established in 1973 as the Ministry of Technology, Research and Local Government. In 1976, in line with new functions and responsibilities pertaining to environmental matters, in order to lead the National ICT Development function, Multimedia and Innovation. In 2007, the science and technology function was divided into Biotechnology, ICT, Industry, Sea to Space and S&T Services clusters.



Kumpulan Modal Perdana (KMP)

Kumpulan Modal Perdana (KMP) is a venture capitalist with a difference. Targeting small technology companies that offer prospective high-growth potential. They focus on technology development in support of Malaysia's Economic Innovation Model.



Malaysian Investment Development Authority

MIDA assists companies which intend to invest in the manufacturing and services sectors, as well as facilitates the implementation of their projects. The wide range of services provided by MIDA include providing information on the opportunities for investments, as well as facilitating companies which are looking for joint venture partners.

About Us
Corporate Structure

QEOS SDN. BHD. FOUR FOUNDERS
DISTINGUISHED IN THE FIELD OF

CMOS | III-IV Semiconductor | High Speed Devices | Integrated Circuit



Prof. Nick Holonyak Jr



Dr. Gabriel Walter



Prof. Milton Feng



Dr. Joy Laskar

COMBINED, THEY HAVE ABOUT 1000 SCIENTIFIC PUBLICATIONS AND MORE THAN 150 PATENTS

CORPORATE STRUCTURE

QEOS Sdn. Bhd.

QEOSTRON 60%

QEOSTRON is a 60% owned subsidiary of QEOS. and introduces a team of seasoned management that has demonstrated profitability in the past 5 years. QEOSTRON is modeled as a CISCO and will focus on Systems design and implementation. QEOSTRON Currently has more than RM100 million in book orders.

QEOS Inc. 100%

QEOS Communication Division (QCD) is incorporated as QEOS Inc and is 100% owned subsidiary of QEOS Sdn. Bhd. QCD will be involved in the Integrated Circuit development and sales of millimeter waves (58 Ghz to 77 Ghz) transceiver and active cable solutions (HDMI 2.0). Revenue is generated from Joint Development Programs, Royalty and Integrated Circuit sales.

QEOSTRON



DENNIS YONG



CT GOH



ERWIN YONG



SP CHONG

VAST EXPERIENCE IN

Design | Build And Installation For Semiconductor | General Industrial | Commercial And Residential Building Services

A leading engineering company that has vast experience in design, build and installation for semiconductor, general industrial, commercial and residential building services. QEOSTRON work with associates and strategic partners to provide outstanding management and solutions for your projects.

About Us

QEOS Founder



DR. GABRIEL WALTER

FOUNDER, CHAIRMAN, EXECUTIVE DIRECTOR
GROUP CHIEF EXECUTIVE OFFICER

CO-INVENTED THE WORLD'S FIRST TRANSISTOR LASER
MAKING POSSIBLE NEW OPPORTUNITIES

About Dr. Gabriel Walter

Gabriel Walter hails from Sarawak, Malaysia and is part of the ethnic minority group of Kelabit. He received his B.S, M.S, and Ph.D. degrees in electrical engineering from the University of Illinois-Urbana Champaign (UIUC), Urbana, IL, in 1998, 2001, and 2003, respectively. He spent a total of 17 years in Illinois and Wisconsin, USA before permanently returning to Malaysia in 2013.

He is currently, the Group Chairman, CEO and major shareholder of Quantum Electro Opto Systems (QEOS) Sdn. Bhd., a Malaysian technology company which he co-founded in 2008 with Prof. Nick Holonyak Jr, the inventor of the Light Emitting Diode (LED) and Prof. Milton Feng. In 2015, QEOS have

successfully acquired controlling interest in MEPCON Sdn. Bhd., a profitable, RM50 million revenue Mechanical and Electrical company. MEPCON, which is renamed QESTRON will be QEOS arm for commercial and infrastructure level IoT implementation.

QEOS also successfully launched a consumer IoT product brand ANGEL (Advance Next Generation Electronics) in 2015, to introduce perfectly connected, high performance and affordable "things". In 2014, QEOS acquired millimeter wave and wired technology portfolio via the acquisition of Centric Inc. assets, to complete QEOS technology portfolio in connectivity technology. To date, QEOS have successfully raised more than RM50 million in funding and controls more than 100 patents worldwide on high impact connectivity technology for fiber optic, millimeter wave and wired communication. QEOS is expected to generate RM85 million in revenue in 2015.

Since 2010, Dr. Gabriel Walter is also appointed as an Adjunct Assistant Professor at the University of Illinois Urbana-Champaign Electrical Engineering department. From 2003 to 2009, he is also a Senior Research Scientist at the University of Illinois at Urbana Champaign. His academic research interest includes III-V light emitters, sensors and efficient, high bandwidth communications systems. In 2008, Dr. Walter with others demonstrated 7 GHz operation of a Light Emitting Diode (LED), breaking 40 years of scientific norm that efficient LEDs for operations larger than 1 GHz was not feasible.

In 2004, he co-invented the world's first transistor laser making possible, new opportunities in high-speed optoelectronics and integrated circuits. From 2000-2003, he co-developed the quantum-dot-coupled-to-quantum-well lasers to demonstrate the first room temperature operation of single quantum dot layer laser at both the visible (600 to 670 nm) and infrared wavelengths (960 to 1100 nm). From 2004 to 2008, Dr. Gabriel Walter also worked as a Senior Research Engineer with Trace Photonics, Inc (USA) where he developed radioisotope power sources. Together, they are the first to demonstrate stable energy conversion efficiencies in excess of 20%. His work has resulted in more than 50 peer-reviewed journal papers, 14 conference papers and more that 80 patents awarded and pending.

About Us

QEOS Founder



PROF. MILTON FENG

FOUNDER, DIRECTOR

PROF. FENG INVENTED THE PSEUDOMORPHIC HBT (PHBT), "PUSHED" THE TRANSISTOR SPEED BOUNDARY TOWARD THZ, AND DEMONSTRATED INP PHBTs WITH THE WORLD'S FASTEST SPEED PERFORMANCE (> 800 GHZ)

About Prof. Milton Feng

Milton Feng is the Nick Holonyak Jr. Chair Professor of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. Prof. Feng was born in Taiwan. He received his B.S degree in electrical engineering from Columbia University (New York) in 1973 and his M.S and Ph.D. degrees in electrical engineering from the University of Illinois, Urbana -Champaign, in 1976 and 1979, respectively. From 1979 to 1983, he was head of the GaAs material and device group at Torrance Research Center, Hughes Aircraft

Company, where he was in charge of ion implantation, AsCl₃ VPE, MOCVD, and MBE technology. In 1983, he developed a direct ion-implanted low-noise and power MESFET and MMICs for X-band phase array radar application. Prof. Feng demonstrated the first 60-GHz GaAs amplifiers in 1983. From 1984 to 1986, he worked for Ford Microelectronics, Inc., in Colorado Springs, CO, where he managed the advanced digital integrated circuit development program in 1 K SRAM and 500 gate array.

Since 1991, Prof. Feng has been a professor of electrical and computer engineering and a research professor at the Microelectronics Laboratory at the University of Illinois. Prof. Feng invented the pseudomorphic HBT (PHBT), "pushed" the transistor speed boundary toward THz, and demonstrated InP PHBTs with the world's fastest speed performance (> 800 GHz). Prof. Feng, along with Prof. N. Holonyak, Jr., demonstrated the first laser operation of a quantum-well-based light emitting transistor (QWLET), a transistor laser (TL). A transistor laser opens up a rich domain of integrated circuitry and high speed signal processing that involves both electrical and optical signals.

Prof. Feng has published over 200 papers, 200 conference talks, and been granted 18 U.S. patents in semiconductor microelectronics. He is an IEEE and OSA Fellow, and serves on many executive and strategy committees both in industry and at conferences. In 1989, he received the Ford Aerospace Corporate Technology Outstanding Principal Investigator Award for his contribution of advancing ion implantation GaAs and InGaAs MESFETs into manufacturable millimeter-wave ICs. In 1997, he received the IEEE David Sarnoff Award, and in 2000, he received the Pan Wen Yuan Outstanding Research Award in Microelectronics. In 2005, he was chosen as the first Holonyak Chair Professor of Electrical and Computer Engineering. In 2006, his transistor laser research paper was selected as one of the top five papers in the 43 year-history of Applied Physics Letters, and also was selected as one of the top 100 most important discoveries in 2005 by Discover magazine.



PROF. NICK HOLONYAK JR.

FOUNDER

NICK HOLONYAK, JR. IS CITED BY MOST AS THE FATHER OF THE VISIBLE LIGHT EMITTING DIODE (LED), INVENTOR OF LED

About Prof. Nick Holonyak Jr.

Prof. Nick Holonyak, Jr. received his B.S (1950), M.S (1951) and Ph.D. (1954) in electrical engineering from the University of Illinois. He was the first graduate student of Professor John Bardeen who later received two Nobel Prizes in Physics. Per Bardeen's invitation, Dr. Holonyak returned to the University of Illinois in 1963 as Professor of Electrical and Computer Engineering where he remains today on the faculty doing

active research. He has mentored over 60 graduate students who have gone on to develop many useful semiconductor devices themselves. His work has led to over 575 papers and 51 patents. He is a member of the National Academy of Engineering (1973); National Academy of Sciences (1984); American Academy of Arts and Science (Fellow, 1984); Russian Academy of Sciences (Foreign Member, 1999). He received the IEEE Edison Medal (1989) and the IEEE Medal of Honor (2003). He received the U.S. National Medal of Science (1990) and the U.S. National Medal of Technology (2002). He received the Japan Prize (1995), the Global Energy International Prize (Russia, 2003) and the Lemelson-MIT Prize (2005). He is a 2008 inductee to the National Inventors Hall of Fame. In 2015 he was awarded with the Charles Stark Draper Prize for innovative engineering achievements.

1. First Visible LED and Alloy Semiconductor Laser (1962)

Nick Holonyak, Jr. is cited by most as the father of the visible light emitting diode (LED). His invention of the visible light (red) LED in 1962 at General Electric in Syracuse, NY initiated the broad use of III-V semiconductor alloy technology, enriching lives everywhere. The long-life red LED was initially used for panel indicators, traffic lights and automobile tail lights. As other colors developed, applications broadened for low power illumination and decorative applications. LED lights produce the greatest amount of light for the energy used and have the longest lifetime of any lighting sources available. With the recent development of the white-light LED, a further option for long-life, low power illumination has become available commercially and is being marketed for general use. In the past few years we have seen many applications, now using incandescent or fluorescent lighting, being replaced with energy saving LED lights. The energy savings are of benefit world-wide.

A key factor in Holonyak's development of the visible LED was developing III-V semiconductor alloys such as gallium arsenide phosphide (GaAsP) which, with adjustment of alloy composition, can "tune" the semiconductor properties to a useful range. His work from 1960 to 1962 on GaAsP and the

initial construction in 1960 of a p-n junction in this crystal system, and a visible-spectrum (red) laser in 1962, led to the commercial introduction of red GaAsP LED's and eventually to the concept of an "ultimate lamp". He is the inventor of the first practical light emitting diode (the GaAsP LED), which also marks the beginning in the use of III-V alloys in semiconductor devices (including heterojunctions).



2. First Quantum-Well Semiconductor Laser (1977)

Late in 1977, Holonyak (with his student EdRezek) developed the first quantum well (QW) semiconductor laser at the University of Illinois and also demonstrated in 1978 the first room temperature CW operation of a QW diode laser (with Dr. Russ Dupuis). Today, every LED and semiconductor laser incorporates Holonyak's work on III-V alloy semiconductors and quantum wells. These same alloys became the basis of a number of later inventions including other color of LED and the quantum-well diode laser commonly used for the read/write function on compact disks (CD) and later digital video disks (DVD). In 1982, he discovered the impurity-induced layer disordering process, which shifts lower gap quantum well layers to higher gap bulk crystal and serves as a basis for integrated optoelectronic devices. The impurity-induced disordering process used on high power quantum-well diode laser facets solved the reliability issues for a 980nm pump laser and is used in today's undersea and long-haul communications (Dr. Don Scifres, SDL CEO).

3. Discovery of Native Oxide for Oxide-VCSEL (1990)

In 1990, Holonyak (with his student John Dallesasse) discovered (~ 400°C) stable native oxides on, and buried in, Al-bearing III-V compounds and demonstrated their use in optoelectronic devices (LEDs and lasers). Today, every vertical cavity surface

emitting laser (VCSEL) uses Holonyak's oxide work for current and field confinement; the "Oxide-VCSEL" is the major high speed photonic source component used today in short-haul optical interconnects for super computers and optical networks.



4. First Transistor Laser (2004)

Holonyak is currently working with Professor Milton Feng on advancing their 2004 transistor laser invention, the light-emitting three-port operation of heterojunction bipolar transistors, including QW-based HBTs and cavity, after 57 years, a transistor laser.



The 2015 Charles Stark Draper Prize For Engineering

The Charles Stark Draper Prize for Engineering honors engineers whose innovative engineering achievements and their reduction to practice have led to important benefits and significant improvement in the well-being and freedom of humanity. Recipients receive a commemorative medallion, a hand-lettered certificate, and a \$500,000 cash award.

The Prize was endowed to Prof. Holonyak by The Charles Stark Draper Laboratory, Inc., of Cambridge, Massachusetts, a pioneering nonprofit organization engaged in applied research, engineering development, education, and technology transfer.

About Us
QEOS Founder



DR.
JOY
LASKAR

Chief Executive Officer

QEOS COMMUNICATION DIVISION, LEADER IN MMV CMOS

About Dr. Joy Laskar

Dr. Joy Laskar received his B.Sc. in Computer Engineering (with Physics and Math Minors) from Clemson University and the M.Sc. and Ph.D. degrees from the University of Illinois at Urbana-Champaign.

From 1992 to 2011, Dr. Laskar held various faculty positions at the University of Hawaii and most recently at Georgia Tech. At Georgia Tech he was the Schlumberger Chair in

Microelectronics, and founded one of the largest mixed-signal design centers in the U.S., the Georgia Electronic Design Center. Dr. Laskar's technical expertise and research contributions are at the intersection of Radio Frequency Electronics, Analog Electronics and Electromagnetics. Since 1995, Dr. Laskar has co-founded 3 start-up companies that have transferred results of his research to commercialization.

Dr. Laskar has co-authored 5 textbooks, has published more than 600 peer-reviewed journal and conference papers, 52 patents (issued or pending) and has been the major advisor for 50 Ph.D students, 41 of whom graduated from his research group at Georgia Tech. He has presented more than 50 invited or plenary talks, and shared in 9 best paper awards (either conference finalists or student awardees from his group). He has helped pioneer the development of integrated high efficiency integrated Power Amplifier (PA) technology in both GaAs (co-founder of RF-Solutions, now part of Anadigics, a primary PA solution for the Intel Centrino platform) and CMOS PA technology (soon to be available for the highest volume cellular platforms) and has investigated aggressive mixed-signal communication architectures resulting in Quellan (now Intersil's Analog Center of Excellence). Most recently he has pioneered the development of low power millimeter wave gigabit wireless circuits, and is the most published author on 60GHz Silicon ICs and module technology (as verified on IEEE Xplore).

In 2 June 2014, Dr. Joy Laskar joined Qeos, bringing along the industry's first single chip mmW CMOS system on a chip: radio, modem, antenna, data conversion layer operating in standard CMOS and PCB manufacturing flows. Thus making Qeos a prominent provider of gigabit wireless and wireline solutions, and a world leader in single chip mmW CMOS for gigabit wireless including its portfolio of next generation 60GHz 802.11ad Wi-Fi and mobile technologies, as well as integrated gigabit CMOS wireline technologies.

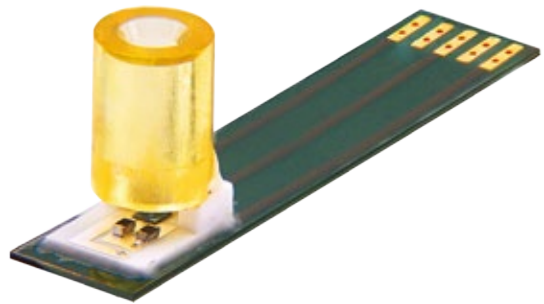


TRANSMITTER OPTICAL FULL ASSEMBLY

-
- ✓ MOST POWER EFFICIENT
 - ✓ LOW COST
 - ✓ MULTI-GBPS OPTICAL LIGHT EMITTER
 - ✓ HIGH SPEED LIGHT EMITTING TECHNOLOGY
-

Transmitter Optical Full Assembly

QEOS has developed a new innovative technology for the design and high-volume production of high-speed, low-cost, and energy-efficient optical solutions, wireless and wireline technology. This is enabled by utilizing breakthrough QEOS Tilted Charge Dynamics™ (TCD) core technology for a new high-speed LED. In this revolutionary innovation the entire light emitting module is fully integrated in a single chip compared to current optical solutions, and the impact in design and production is substantial. The market need for lower power-per-gigabit increases as bandwidths get faster and data usage grows exponentially. QEOS technology will enable the digital ecosystem to keep pace.



A traditional light emitter module includes a laser, power driver, lens, and several other separate parts. QEOS has developed light emitting technology that allows these similar types of functions to be embedded in a single chip, thus resulting in much smaller, lower-power, and lower-cost modules used for generating optical data transmission signals.

This new approach leads to an overall improvement in the way optics products are produced. The finished product can then be used in active optical cables, video cameras, computers, displays, and portable devices, for board-to-board interconnects, and to support a wide range of digital transmission interfaces, such as USB, HDMI, Ethernet, Thunderbolt, Infiniband and others.



ENHANCED SURVEILLANCE SYSTEMS

QEOS Enhanced Surveillance Systems

Utilizing its Tilted Charge Dynamics technology, QEOS has developed the QEOS QCam Optical Interface. By integrating this high-speed interface directly into QEOS' specially designed QCam System Hubs and Surveillance Cameras, many of the limitations associated with high-resolution and high bandwidth video have been eliminated.

QCam enables the system to move the majority of the processing away from the camera and to the centralized server at light speed, and enables low-latency, low-power consumption, and full frame rate cameras the ability of delivering uncompressed video directly to NVRs or video servers via special high-speed optical cables. The QCam High Speed Hub allows for cameras and other components to easily be deployed for integrated, low latency and long length operations. The QEOS QCam Network/Power Cables enable secure, long length optical deployments and even provide optional power to the cameras. QEOS QCam enabled NVRs and Servers integrated with QEOS Video Management Software allow for video to be quickly processed, managed and distributed as needed for viewing, analytics and storage.

Advance High-Speed Surveillance System

The QEOS Advanced High Speed Surveillance System is an end-to-end surveillance network solution. It also includes the High-Speed System Hub, modules for LED security illuminators, and expansion capabilities for additional security solutions. The Surveillance System is complete with options for integrated Servers and NVRs, storage solutions, video management software and integrated HD and 4K UltraHD displays.

QEOS Product

ANGEL in Internet of things



Advanced Next Generation Electronics

The Internet of Things is about connected things, making a difference in our lives. With over 100 patents on frontier technology that connects, QEOS creates ANGEL; collection of things ensured to be perfectly connected together.

1. Smart Home

Imagine waking up from bed, dutifully woken up by your alarm which has already calculated the wake-up time based on your schedule of the day. The house alarm automatically disarms as your coffee machine and toaster sets up, the TV lights up displaying the morning's news. You walk into the kitchen with the sweet smell of coffee, toast and your daily news update. The door automatically locks as you exit and your car adequately cools down. By the time you enter your vehicle, the destination is already preset in the car's navigation system based on your calendar's schedule for that day.

2. Smart School

Forget about traditional chalkboards & whiteboards in schools. QEOS 4K UHD display can be used as the new blackboard. Its interactive touch screen function makes it easier to navigate. Lessons are more memorable by employing a variety of different learning styles. Gone are the days of carrying heavy books to class for teaching. ANGEL enables lesson syllabus to be synced into a system from many subjects broken down into many chapters. Therefore the need for transporting class contents is reduced. Notes and homework can be shared online for students to access from home. It's the start of the era of E-learning.

3. Business

Take an office environment for example ; A meeting room where you can wirelessly access your computer in your cubicle to grab some files. Play an interactive presentation from networked attached storage (NAS) and even share your screen among colleagues at the press of a button. ANGEL ensures perfect connectivity between the devices, reducing the need to buy specific equipment for specific needs and having a hard time trying to network it together with the rest of the office appliances. Make ANGEL the standard.

QEOS Advanced Lighting System
 QEOS LED T8 & QEOS High Bay Light



Application Areas



- Office
- Hospitality
- Industrial
- Car park

QEOS LED T8

The QEOS LED T8 range offers safe, reliable and affordable energy saving alternatives to standard Fluorescent T8 lamps.

Available in 4'/120cm lengths, QEOS LED T8s can be quickly fitted as a replacement into luminaires operating on electro-magnetic control gear or on electronic gear with a simple re-wire (for further details see intallation guide).

High Quality Lighting Effect

- High uniformity of light, create elegant lighting atmosphere for retail & commercial applications
- Especially suitable for supermarket, high color rendering of fresh food to engage customers
- Environment friendly - no UV, no Hg

Specification Features

Long-life And High Efficiency



Up to 50,000 hrs rated lifetime, reduced maintenance cost



High Efficiency, up to 125 lm/w, increased energy saving



Features

- Instant-on light
- Long lifetime: up to 50,000 hours
- High Power Factor: 0.9
- Compatible with existing installations
- Colour temp : 6500 cct
- CRI

Color Temperature
5700 K

Color Rendering Index (Cri)
80



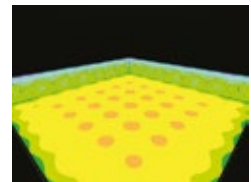
Lumen
15000 lm

Power
130 W

QEOS High Bay

QEOS High Bay illuminates the whole area as compared to conventional high bay lighting which are dimmer and only to focuses on limited areas. The QEOS High Bay performance is brighter and distributes light uniformly.

Conventional High Bay
 Lights only focus on one point
 resulting in dimmed areas



Orange spots indicate
 the lighted areas



QEOS High Bay
 Lights equally spreads out
 Whole area lighted up



Red colour indicates
 the lighted areas





Controlling & Monitoring the Internet Of Things
using Bluetooth Smart Mesh



Lighting



Switchers



Thermostats



Sensors



Access

About ANGEL Wisilica

Smart mesh technology is regarded as a key to many Internet of Things applications because it enables wider coverage that can extend an entire building.

Meshes mean that connected things such as thermostats and lights can communicate without going through a nearby PC or dedicated hub device, so networks are easier and less expensive to build.

Features



Power Consumption

Enables low power mesh networking



Simple & Affordable

Ready built - in to many existing smart devices (phone, tablets, laptop etc.



Reliable BT Smart Technology

Co-exists well with Wi-Fi Neither interfere with each other. Uses encryption & authentication, sends data on 3 channels



Secure

Secured and robust Protected against eavesdroppers and man-in-middle attacks

Three carrier channels



Scalable technology

Extends the network by passing messages between devices. Extends the reach of Bluetooth Smart range to whole home, building or local area using flood mesh algorithm (distance beyond 50m)



TYPICAL APPLICATIONS

- Hybrid Fiber Wireless
- P2P Backhaul
- Security/Surveillance
- 5G / Massive MIMO
- Enterprise Connectivity

AVAILABILITY
Sampling now

QWAVE 6032

60GHz CMOS Integrated Multi Gigabit Digital Radio for Outdoor P2P Communications

The Qwave 6032 is an all-outdoor point-to-point (P2P) millimetre wave radio system operating in the 57-66GHz band, providing the user with capacities of optical networking standards, up to 3 Gbps.

Qwave 6032 offers the industry's lowest Capital Expenditures (CAPEX) for link deployment by leveraging the co-design of standard PCB material and a standard manufacturing flow that have been developed and optimised over the past 10 years.

Qwave 6032 exhibits unprecedented millimetre wave functionality providing a multi-gigabit wireless bits in/out solution for various link distances with GigE interface.

1. Standard Manufacturing Flow: Qwave 6032 architecture leverages standard digital CMOS, standard PCB with integrated high-gain antenna, and is assembled using low cost conventional techniques. Furthermore, Qwave 6032 advanced BIST enables digital die sorting reducing testing cost. This simplicity in manufacturing and testing yields the lowest CAPEX in the industry.

2. Single Chip: Qwave 6032 relies on a CMOS single chip transceiver with integrated ADC/DAC and MODEM, significantly reducing the system's Rest of Bill of Materials (RBOM) requirements.

3. System Co-Design: intertwined with knowledge of the fabrication and assembly flows, the Qwave 6032 is a result of a co-designed approach: the chip, the antenna, the package, and the interconnections are all modeled and meticulously designed and optimized to match the standard manufacturing flow resulting in an unprecedented millimeter wave performance at a compelling price point.



1

1

SkyzResidence, Puchong
(2014-2017)

2

KPKT Apartment, Jinjang
(2012 - 2014)

3

SKYZ Jelutong Residences, Shah Alam
(2014 - 2016)

4

The Conexion, Putrajaya
(2013 - 2017)



2



3



4



DR. GABRIEL WALTER

FOUNDER, CHAIRMAN, EXECUTIVE DIRECTOR
GROUP CHIEF EXECUTIVE OFFICER

CO-INVENTED THE WORLD'S FIRST TRANSISTOR LASER
MAKING POSSIBLE NEW OPPORTUNITIES

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QEOS also successfully launched a consumer IoT product brand ANGEL (Advance Next Generation Electronics) in 2015, to introduce perfectly connected, high performance and affordable "things". In 2014, QEOS acquired millimeter wave and wired technology portfolio via the acquisition of Centric Inc. assets, to complete QEOS technology portfolio in connectivity technology. To date, QEOS have successfully raised more than RM50 million in funding and controls more than 100 patents worldwide on high impact connectivity technology for fiber optic, millimeter wave and wired communication. QEOS is expected to generate RM85 million in revenue in 2015.

Since 2010, Dr. Gabriel Walter is also appointed as an Adjunct Assistant Professor at the University of Illinois Urbana-Champaign Electrical Engineering department. From 2003 to 2009, he is also a Senior Research Scientist at the University of Illinois at Urbana Champaign. His academic research interest includes III-V light emitters, sensors and efficient, high bandwidth communications systems. In 2008, Dr. Walter with others demonstrated 7 GHz operation of a Light Emitting Diode (LED), breaking 40 years of scientific norm that efficient LEDs for operations larger than 1 GHz was not feasible.

In 2004, he co-invented the world's first transistor laser making possible, new opportunities in high-speed optoelectronics and integrated circuits. From 2000-2003, he co-developed the quantum-dot-coupled-to-quantum-well lasers to demonstrate the first room temperature operation of single quantum dot layer laser at both the visible (600 to 670 nm) and infrared wavelengths (960 to 1100 nm). From 2004 to 2008, Dr. Gabriel Walter also worked as a Senior Research Engineer with Trace Photonics, Inc (USA) where he developed radioisotope power sources. Together, they are the first to demonstrate stable energy conversion efficiencies in excess of 20%. His work has resulted in more than 50 peer-reviewed journal papers, 14 conference papers and more that 80 patents awarded and pending.



PROF. MILTON FENG

FOUNDER, DIRECTOR

PROF. FENG INVENTED THE PSEUDOMORPHIC HBT (PHBT), "PUSHED" THE TRANSISTOR SPEED BOUNDARY TOWARD THZ, AND DEMONSTRATED INP PHBTs WITH THE WORLD'S FASTEST SPEED PERFORMANCE (> 800 GHZ)

About Dr. Gabriel Walter

Milton Feng is the Nick Holonyak Jr. Chair Professor of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. Prof. Feng was born in Taiwan. He received his B.S degree in electrical engineering from Columbia University (New York) in 1973 and his M.S and Ph.D. degrees in electrical engineering from the University of Illinois, Urbana -Champaign, in 1976 and 1979, respectively. From 1979 to 1983, he was head of the GaAs material and

device group at Torrance Research Center, Hughes Aircraft Company, where he was in charge of ion implantation, AsCl₃ VPE, MOCVD, and MBE technology. In 1983, he developed a direct ion-implanted low-noise and power MESFET and MMICs for X-band phase array radar application. Prof. Feng demonstrated the first 60-GHz GaAs amplifiers in 1983. From 1984 to 1986, he worked for Ford Microelectronics, Inc., in Colorado Springs, CO, where he managed the advanced digital integrated circuit development program in 1 K SRAM and 500 gate array.

Since 1991, Prof. Feng has been a professor of electrical and computer engineering and a research professor at the Microelectronics Laboratory at the University of Illinois. Prof. Feng invented the pseudomorphic HBT (PHBT), "pushed" the transistor speed boundary toward THz, and demonstrated InP PHBTs with the world's fastest speed performance (> 800 GHz). Prof. Feng, along with Prof. N. Holonyak, Jr., demonstrated the first laser operation of a quantum-well-based light emitting transistor (QWLET), a transistor laser (TL). A transistor laser opens up a rich domain of integrated circuitry and high speed signal processing that involves both electrical and optical signals.

Prof. Feng has published over 200 papers, 200 conference talks, and been granted 18 U.S. patents in semiconductor microelectronics. He is an IEEE and OSA Fellow, and serves on many executive and strategy committees both in industry and at conferences. In 1989, he received the Ford Aerospace Corporate Technology Outstanding Principal Investigator Award for his contribution of advancing ion implantation GaAs and InGaAs MESFETs into manufacturable millimeter-wave ICs. In 1997, he received the IEEE David Sarnoff Award, and in 2000, he received the Pan Wen Yuan Outstanding Research Award in Microelectronics. In 2005, he was chosen as the first Holonyak Chair Professor of Electrical and Computer Engineering. In 2006, his transistor laser research paper was selected as one of the top five papers in the 43 year-history of Applied Physics Letters, and also was selected as one of the top 100 most important discoveries in 2005 by Discover magazine.

Board Of Directors

QEOS Technology



IR. MOHD GHAZALI MAHMOOD

Executive Director

Mohd Ghazali Mahmood received his B. Sc. Civil Engineering (Hons.) from the University of Southampton (UK) in 1975 and Diploma in Hydro Power from the Norwegian Institute of Technology, University of Trondheim (Norway) in 1981. He was a founder director of QEOS when it was incorporated in 2008, and is presently its Executive Director.

He started his career with the National Electricity Corporation where for nine years he was involved in the development of some of the major hydropower projects in Malaysia, namely the Temenggor and Kenyir Hydroelectric Power Plant Projects.

After leaving National Electricity Corporation he was involved in the civil construction industry, where for the next 20 years he was involved in the constructions of buildings, roads and other infrastructure projects. Besides the normal civil construction projects, he is also experienced in the privatisation of projects involving roads, buildings, university hostels, etc. During this period he rose to become the CEO of one of the prominent construction companies in the country.



NASER JAAFAR

*Executive Vice President Of Strategic Initiative
And Funding Agensi Inovasi Malaysia (Aim)*

Naser Jaafar is the Executive Vice President of Strategic Initiatives and Funding at Agensi Inovasi Malaysia (AIM). His team is responsible for creating wealth through innovation for the country via three delivery channels specifically, open bidding of new technology sourced from local universities and Public Research Institutes, direct equity investment by AIM and also matching of Entrepreneurs and Promoters.

Naser also heads the team at AIM, which is the joint secretariat with Ministry of Science, Technology and Innovation for the Investment Committee of Public Funds (ICPF). This team is responsible for the evaluation, development of KPIs and Performance Management of all the public funds for Research, Development and Commercialization (R, D&C) in Malaysia.

Prior to joining AIM, Naser was with Bank of America Merrill Lynch Malaysia for 22 years, of which the last 9 years as the Chief Executive Officer. Naser has served various positions at the Bank in Malaysia, Singapore and Jakarta. Naser received his Masters of Business Administration from North Texas State University, USA in 1987.

Board Of Directors
QEOS Technology



YARHAM YUNUS

Chief Financial Officer of Kumpulan Modal Perdana

Yarham Yunus is currently the Financial Controller of Kumpulan Modal Perdana. He is also in charge of monitoring the Company's investments portfolio in China and ASEAN region.

Yarham has been involved in the venture capital industry since he first joined Malaysian Technology Development Corporation (MTDC) in 1996. He joined MTDC Private Equity Management, a wholly-owned subsidiary of MTDC, when the Company was incorporated to centralise all of the venture capital and private equity activities under the MTDC Group. During his tenure at MTDC, Yarham was also involved in the formation of a Penang-based venture capital company, BTVC Sdn Bhd.

He later joined BPMB-NIF Modal Teroka (BPMB-NIF), a joint venture between Bank Pembangunan & Infrastruktur Malaysia Berhad and Nippon Investment & Finance, Japan. Prior to joining MTDC, Yarham began his career with Standard Chartered Bank.

Yarham holds a Bachelor of Business Administration in Accounting from University of Wisconsin, U.S.A and MBA in Venture Capital from Universiti Teknologi Malaysia.



MUHAMMAD ZAUQI ABDULLAH

Executive Director of First Floor Capital

Zauqi currently serves on the board of directors of Marseilles Inc. and QEOS Sdn. Bhd. Zauqi has years of experience in the technology and marketing industry which provides him with an overall insight of what works and what doesn't. Being the founding partner of FirstFloor Capital (Venture Capital Management Company), he plays an integral part in FirstFloor Capital's investment plans and its growth investment roadmaps.

Having been an entrepreneur himself, Zauqi has polished management expertise. And with a background encompassing design, multimedia and advertising that spans over 7 years, his strengths lie in his understanding in the technology, brand and marketing industry.

Before joining FirstFloor Capital, he was involved in the design and implementation of multiple government and international projects (Philips Australia CD-i Research & Development, Ministry of Defence, Malaysian Smart School Management System and Young Asia Television and Sapura Advanced Systems).

Zauqi holds Diplomas' in Computer Science, and Data Processing Management from Workers Institute of Technology, and Institute of Management Information System (IMIS) respectively.



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