AJB Photonics
WHERE LIGHT MEANS BUSINESS

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INDUSTRY INSIGHTS

A monthly newsletter from a photonics insider

FROM THE EDITOR

This inaugural issue of the AJB Photonics Industry Insights launches in a week when four brave astronauts returned from the Moon — humanity's first crewed lunar voyage in more than fifty years. Watching the Apollo missions as a child definitely sparked my pursuit of a career in science and technology. Standing up this newsletter feels like my own small moonshot. After four decades in this industry, I've watched photonics grow from a niche discipline into a technology that underpins industries as diverse as artificial intelligence, fusion energy, quantum computing, communication, healthcare, and defense. This month alone, Nvidia committed $4 billion to photonics companies Coherent and Lumentum — a signal that our industry has arrived at the center of the global technology conversation. Billions more are flowing into laser fusion and quantum photonics. It is an extraordinary moment, and exactly why I launched AJB Consulting and this newsletter: to cut through the noise so you don't have to, and deliver the intelligence that matters.

This newsletter is a community resource — written for people who care about this industry as much as I do. If you find it valuable, please share it with a colleague. Future editions will be posted on my LinkedIn page and website at ajbphotonics.com. And if there are topics you'd like to see covered, companies worth watching, or events worth featuring, I'd love to hear from you at andrebrown@ajbphotonics.com. The best newsletters are a conversation, not a monologue.

— Andrew Brown, Ph.D. · AJB Consulting

PHOTONICS ENABLES · MARKET INTELLIGENCE · CONTEXT

Photonics Enables: Artificial Intelligence

The explosive growth of large language models and AI data centers has created a crisis of bandwidth and energy. Traditional copper interconnects cannot move data fast enough or efficiently enough to feed the computational appetite of modern AI. The answer is photonics.

Silicon photonics replaces copper with light, transmitting data at hundreds of gigabits per second over fiber with a fraction of the power consumption. Co-packaged optics (CPO) takes this further, integrating laser transceivers directly onto the switch or processor package, eliminating the pluggable module bottleneck entirely. The result is data center interconnects that are faster, cooler, and more energy efficient — critical when a single AI training cluster can consume as much power as a small city.

Nvidia's recent $4 billion commitment to Coherent and Lumentum is the clearest signal yet of how central light-based technology has become to the AI buildout. Jensen Huang is not buying optical components because they

are nice to have. He is buying supply chain security for the infrastructure that every AI product in the world depends on.

For photonics companies, the AI wave represents a generational opportunity. Demand for advanced lasers, optical transceivers, photonic integrated circuits, and high-speed modulators is accelerating faster than supply chains can respond. The companies that can scale — in yield, in reliability, and in manufacturing volume — will define the next decade of the industry. The energy demands of AI are also accelerating interest in abundant clean power sources — making photonics-driven inertial fusion energy the natural next chapter in this story.

Next issue (May 2026): Photonics Enables Inertial Fusion Energy

BUSINESS & INDUSTRY · DEALS · FUNDING · M&A

- **Nvidia commits $4B to Coherent and Lumentum in landmark photonics investment**
  Nvidia invested $2B each in Coherent and Lumentum on March 2, including multi-billion dollar purchase commitments for advanced lasers and silicon photonics, securing AI infrastructure supply chains and validating photonics as central to the next phase of AI data center buildout.

- **Xscape Photonics raises $37M, launches eight-wavelength laser for AI data centers**
  The silicon photonics startup brought total Series A funding to $81M and launched FalconX, the industry's first fully redundant external laser device emitting eight wavelengths, targeting the multi-terabit-per-second bandwidth demands of hyperscale AI clusters.

- **EPIC records 20 photonics M&A deals in March 2026**
  European photonics industry body EPIC logged twenty mergers and acquisitions in March, with Jenoptik acquiring FIMA's Intelligent Transportation Systems business and VIGO Photonics acquiring US-based InfraRed Associates, signaling continued consolidation across the sector.

- **Femtum secures $16M Series A for semiconductor laser manufacturing**
  Canadian laser startup Femtum closed a $16M Series A backed in part by Hamamatsu Ventures, targeting advanced laser solutions for semiconductor manufacturing.

- **Lumentum and Coherent both join S&P 500 in historic moment for photonics**
  In a historic first, two photonics companies — Lumentum and Coherent — were simultaneously added to the S&P 500 on March 23, 2026, alongside Vertiv and EchoStar. Both had received $2 billion investments from Nvidia earlier that month. Wall Street's message was unambiguous: photonics is core AI infrastructure.

- **Apollo Funds acquires Nippon Sheet Glass for $3.7B**
  US private equity firm Apollo Funds acquired Japanese optical glass supplier Nippon Sheet Glass for $3.7B, reflecting growing strategic interest in precision optical materials supply chains.

TECHNOLOGY & PRODUCTS · LAUNCHES · BREAKTHROUGHS · APPLICATIONS

- **AOI launches 400mW pump laser for silicon photonics and co-packaged optics**
  Applied Optoelectronics launched a 400mW narrow-linewidth DFB laser capable of closing 800G/1.6T power budgets — a critical building block for the industry's transition to co-packaged optics at scale.

- **Chalmers University integrates hundreds of micro-lasers on one-centimeter chip**
  Researchers demonstrated a new laser platform integrating optical components and hundreds of microscopic lasers on a single 1cm chip, paving the way for miniaturized biosensors that could move lab diagnostics from hospitals to homes.

- **Coherent showcases 1.6T silicon photonics transceiver at OFC 2026**
  Coherent unveiled a 1.6T-DR8 silicon photonics transceiver module using Marvell's Ara 3nm optical DSP at OFC 2026, demonstrating rapid industry progress toward next-generation AI data center interconnects.

- **Flinders University polymer could replace germanium in thermal imaging**
  Researchers designed a sulfur-rich polymer lens material as a potential low-cost replacement for germanium in thermal imaging cameras — a development that could significantly reduce the cost of infrared systems for defense and industrial use.

- **Nature Photonics: photonic-crystal surface-emitting lasers set for high-power applications**
  A review in Nature Photonics assessed PCSELs as the emerging technology of choice for high-power laser applications, with industry actively evaluating them for manufacturing, defense, and medical uses.

- **SPIE Prism Awards 2026 recognize breakthroughs in quantum, lasers, and XR**
  SPIE's 18th annual Prism Awards at Photonics West honored leading new products spanning cameras, sensors, lasers, quantum technology, and extended reality.

MARKET INTELLIGENCE · DATA · REPORTS · TRENDS

- **SPIE 2026: core photonics reaches $381B; enabled market tops $2.7T**
  The SPIE 2026 Global Industry Report found core optics and photonics component revenues reached $381B in 2024, underpinning a $2.7T photonics-enabled product market with 5,417 companies across 65 countries.

- **Yole: photonics packaging market to triple to $14.4B by 2031**
  Yole Group forecasts the photonics packaging market will grow from $4.5B today to $14.4B by 2031, driven by AI data center demand for optical transceivers and co-packaged optics.

- **Global photonics market projected to reach $1T by 2031**
  DataM Intelligence estimates the global photonics market at $666B in 2022 growing at a 5.8% CAGR to exceed $1T by 2031, with AI data centers, telecom, industrial manufacturing, and medical diagnostics as the four primary demand drivers.

- **EPIC March M&A tracker: 20 deals, Europe leads cross-border acquisitions**
  EPIC's monthly tracker recorded 20 photonics transactions in March 2026, with European companies involved in the majority — confirming consolidation is accelerating across the supply chain.

- **Silicon photonics market at $3.1B in 2025, forecast to reach $10.4B by 2030**
  Mordor Intelligence values the silicon photonics market at $3.1B in 2025 growing at 27% CAGR to $10.4B by 2030, driven by hyperscale data center upgrades and rapid LiDAR adoption in automotive.

- **Inertia Enterprises raises $450M to build world's first grid-scale fusion laser**
  Laser fusion startup Inertia Enterprises, founded by NIF pioneers Mike Dunne and Annie Kritcher, closed a $450M Series A led by Bessemer Venture Partners to fund a pilot facility built around "Thunderwall" — a laser beamline designed to produce 50 times higher average power than any prior laser of its type and become the foundation of a gigawatt-scale fusion power plant.

FUN WITH PHOTONS · MAKING LITE OF LIGHT ·

"How inappropriate to call this planet Earth, when it is quite clearly Ocean."

— Arthur C. Clarke

DID YOU KNOW?

The laser that powered the Apollo missions' retroreflector experiments is still bouncing photons off mirrors left on the lunar surface in 1969. Scientists fire lasers at the moon from Earth to this day — measuring the distance to within a few millimetres. The moon is getting about 3.8cm further away every year. Photonics has been tracking it the whole time.

UPCOMING EVENTS · CONFERENCES · TRADE SHOWS · WEBINARS

Apr 17, 2026
CPIA Rocky Mountain Photonics Summit & Expo 2026
📍 Denver Marriott Westminster, CO, USA

Apr 22-24, 2026
AKL 2026 — International Laser Technology Congress
📍 Aachen, Germany

Apr 27-30, 2026
SPIE Defense + Commercial Sensing 2026
📍 National Harbor, MD, USA

Apr 28-30, 2026
EPIC AGM & Summit 2026
📍 Juan-les-Pins, France

May 5-7, 2026
Optatec 2026
📍 Frankfurt, Germany

May 17-21, 2026
CLEO 2026
📍 Charlotte, NC, USA

Jun 2-5, 2026
Photonics North 2026
📍 Quebec City, Canada

Aug 23-27, 2026
SPIE Optics + Photonics 2026
📍 San Diego, CA, USA

Sep 9-11, 2026

Sep 20-24, 2026

CIOE 2026

📍 Shenzhen, China

ECOC 2026

📍 Malaga, Spain

Delivered with a lifelong passion for photonics