

# Optical Communication & Photonics This Week's Keyword

## Weekly Intelligence Report

## AI Photonics

2026-06-13 | 10 articles | 5 countries  
troy-technical.jp

Powering next-gen AI infrastructure

10

articles

Total Articles Analyzed

5

countries

Source Countries

\$4.5B

investment

NVIDIA Optics Supply

81%

reduction

Photonic AI Power

### All 10 Articles This Week — 5-Axis Evaluation Matrix

How to read columns — Tech Novelty: degree of breakthrough Market Proximity: closeness to commercialization Market Impact: industry-wide effect Data Reliability: quantitative data & peer review US/EU Relevance: direct impact on US/European companies & supply chains

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#01	Oriole/AMD Photonic AI	New Product	●●●●○	●●●●●	●●●●○	●●●●○	●●●●●	Oriole Networks & AMD commercially deploy first photonic AI network in UK, reducing power by 81% for AI workloads.
#02	NVIDIA \$4.5B Optics	Corporate Strategy	●●●●○	●●●●●	●●●●●	●●●●○	●●●●●	NVIDIA invests \$4.5B in Lumentum, Coherent, Corning to secure CPO supply for AI data centers, projecting 35% CPO by 2030.
#03	HyperLight LNOI Mod	Research	●●●●●	●●●●○	●●●●○	●●●●●	●●●●●	HyperLight Corp. develops ultra-low-power thin-film lithium niobate optical modulators (<1fj/bit, 0.5V, >110GHz).
#04	Enablence 800G/1.6T	New Product	●●●●○	●●●●●	●●●●○	●●●●○	●●●●●	Enablence Technologies secures \$5.3M order for 800G/1.6T optical communication products for North American hyperscalers.
#05	Signal AI Pluggable	Market Analysis	●●●●○	●●●●●	●●●●○	●●●●○	●●●●●	Signal AI forecasts coherent pluggable optics (800ZR+) to lead telecom bandwidth, driving 'scale-across' AI data centers.
#06	NVIDIA CPO Roadmap	Corporate Strategy	●●●●○	●●●●●	●●●●●	●●●●○	●●●●●	NVIDIA CEO Jensen Huang unveils 'Copper-and-Optics Roadmap,' positioning CPO as core AI infrastructure by 2028.
#07	Broadcom 200T Switch	New Product	●●●●○	●●●●○	●●●●●	●●●●○	●●●●●	Broadcom advances 200 terabit switch tapeout with CPO and 1.6T DSP, targeting \$100B in AI revenue by 2027.
#08	Data Gravity AI Optics	Analysis	●●●●○	●●●●●	●●●●○	●●●●○	●●●●●	Data Gravity analysis: AI performance bottleneck shifts to interconnects; NVIDIA leads with CPO-equipped Spectrum-X switches.
#09	IOWN AI Fund	Corporate Strategy	●●●●○	●●●●○	●●●●●	●●●●○	●●●●○	NTT, SK Group, Chunghwa Telecom invest \$500M in 'IOWN AI Fund' to commercialize light-first data transfer for AI.
#10	Novel Optic Material	Research	●●●●●	●●●●○	●●●●○	●●●●○	●●●●●	Researchers develop novel material for low-energy optical modulation without polarization, enhancing AI scaling.

●●●●○ High ●●●●○ Med-High ●●●●○ Med ●●●●○ Low | Yellow highlight = featured article

## Three Questions That Demand Your Decision This Week

### 1 Is your AI infrastructure ready for the optical shift?

NVIDIA and AMD are aggressively deploying photonic networks and CPO. Does your current data center design account for the 81% power reduction and performance gains of optical interconnects, or will you be left behind?

### 2 How exposed is your supply chain to CPO dominance?

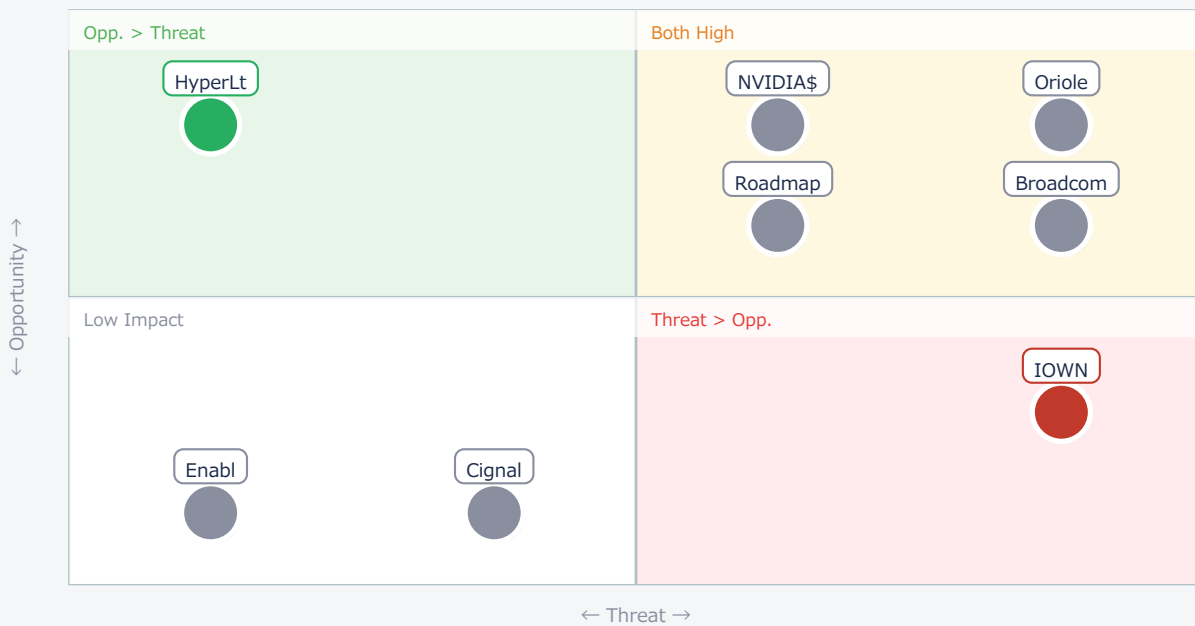
NVIDIA's \$4.5B investment in key optical suppliers (Lumentum, Coherent, Corning) signals a move towards CPO standardization. Are your procurement strategies diversified enough, or are you at risk of supply lock-in or component obsolescence?

### 3 Are you investing in next-gen photonic materials?

Breakthroughs like HyperLight's LNOI modulators offer orders-of-magnitude efficiency gains. Is your R&D; tracking these foundational material innovations, or will non-US/EU players like NTT's IOWN define future standards?

## Opportunities vs. Threats for US/European Companies

Opportunity vs. Threat Matrix for US/European Companies



Item	Quadrant	↑ Opportunity	↓ Threat
● Oriole	Critical	AI efficiency	Legacy infra
● NVIDIA\$	Critical	CPO market	Supply lock-in
● Broadcom	Critical	AI switch	Competitor lead
● Roadmap	Critical	Optical shift	Copper obsol.
● HyperLt	Opp.	New material	Long R&D;
● IOWN	Threat	New arch	Non-US/EU std
● Enabl	Ref.	Niche growth	Limited scope

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● Signal	Ref.	Market insight	Lagging trends
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## Deep Dive ① — Photonic AI Network Commercial Deployment

#01 | 2026/06/08 | SiliconANGLE Media Inc. | Tech Novelty ●●●●○ Proximity ●●●●● Market Impact ●●●●○ Data Reliability ●●●●○ US/EU Relevance ●●●●●

Oriole Networks, in collaboration with AMD, has achieved the world's first large-scale commercial deployment of an AI system operating entirely on a photonic network in the UK. This PRISM platform, integrated with AMD Instinct GPUs and EPYC CPUs, replaces electronic switches with optical circuit switching.

The system demonstrates an 81% reduction in core power consumption and minimizes GPU idle time to less than 1%, setting a new benchmark for energy efficiency in AI infrastructures. This deployment validates the efficacy of pure photonic networks in demanding AI environments.

### ► Strategic Analyst's Perspective

The 81% power reduction is highly realistic given the fundamental efficiency gains of optical over electrical switching, especially in large-scale AI clusters where interconnect power is a major bottleneck. Technical barriers include scaling manufacturing of complex photonic integrated circuits and ensuring interoperability with diverse AI hardware ecosystems. [Opportunity] for US/EU OEMs and data center operators to significantly reduce TCO and carbon footprint, gaining a competitive edge. [Threat] for traditional electrical switch manufacturers and those slow to adopt photonics, risking obsolescence. [Next Actions] [R&D;] Evaluate Oriole's PRISM platform and AMD's integration for potential licensing or partnership. [Procurement] Assess current data center power consumption baselines and model potential savings with photonic networks.

## Deep Dive ② — NVIDIA's \$4.5B Optical Supply Chain Bet

#02 | 2026/06/04 | BingX | Tech Novelty ●●●○○ Proximity ●●●●● Market Impact ●●●●● Data Reliability ●●●●○ US/EU Relevance ●●●●●

NVIDIA has committed a monumental \$4.5 billion investment in the optical supply chain, allocating \$4 billion to Lumentum and Coherent, and \$500 million to Corning. This strategic move aims to secure next-generation silicon photonics laser supply and expand optical connectivity manufacturing capacity, primarily targeting Co-Packaged Optics (CPO).

NVIDIA anticipates CPO adoption to reach 35% by 2030, underscoring its commitment to optimizing the entire AI infrastructure beyond just GPUs. This investment will accelerate CPO development and deployment, fundamentally reshaping AI data center design.

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► Strategic Analyst's Perspective

NVIDIA's investment is a strong signal of market direction and is highly realistic, given the escalating power and bandwidth demands of AI. The 35% CPO adoption by 2030 seems plausible, driven by hyperscaler needs. Technical barriers include yield rates for CPO manufacturing, thermal management of co-packaged components, and standardization across different vendors. [Opportunity] for US/EU materials & component suppliers (beyond Lumentum/Coherent/Corning) to become part of the CPO ecosystem. [Threat] for OEMs and device manufacturers relying solely on traditional pluggable optics, as CPO becomes the standard for high-performance AI. [Next Actions] [Procurement] Diversify optical component supplier base beyond current incumbents. [Strategy] Analyze NVIDIA's CPO roadmap and identify gaps or opportunities for complementary technologies.

## Deep Dive ③ — Ultra-Low-Power Thin-Film Lithium Niobate Modulators

#03 | 2026/06/05 | PatSnap (Eureka) | Tech Novelty ●●●●● Proximity ●●○○○ Market Impact ●●●●○ Data Reliability ●●●●● US/EU Relevance ●●●●●

HyperLight Corp. has developed groundbreaking optical modulators using thin-film lithium niobate (LNOI) technology, achieving ultra-low power consumption. These modulators operate at an exceptionally low voltage of 0.5V with less than 1 fJ/bit energy consumption.

They maintain a bandwidth exceeding 110GHz and optical loss below 0.1dB/cm. This breakthrough addresses material challenges in energy-efficient photonic modulators, promising significant improvements in the power efficiency of data centers and AI computing by leveraging nanoscale fabrication.

### ► Strategic Analyst's Perspective

The reported performance figures (0.5V, <1 fJ/bit, >110GHz) represent an academic breakthrough and are likely achieved under ideal lab conditions. Scaling this to mass production with consistent yield and reliability remains a significant technical barrier. Integration with existing silicon photonics platforms and thermal stability at high operating temperatures are also challenges. [Opportunity] for US/EU technology licensors and IP holders to acquire or develop complementary IP in LNOI fabrication and integration. [Threat] for existing silicon photonics modulator suppliers if LNOI can achieve cost-effective mass production, as it offers superior performance. [Next Actions] [R&D;] Initiate internal research or collaborate with HyperLight to validate LNOI performance and assess manufacturability. [Business Dev] Explore potential strategic partnerships or investment in LNOI technology developers.

## Other Notable Articles

Broadcom Advances Next-Gen 200 Terabit Switch Tapeout (Techstock01 | Substack)  
Tech Novelty ●●●●○ Proximity ●●●○○ Market Impact ●●●●●

Broadcom's 200T switch with CPO and 1.6T DSP signals aggressive push into AI infrastructure, targeting \$100B AI revenue.

NVIDIA CEO Jensen Huang Unveils 'Copper-and-Optics Roadmap,' Positioning CPO as Core AI Infrastructure by 2028 (Futubull Community)  
Tech Novelty ●●●○○ Proximity ●●●●○ Market Impact ●●●●●

NVIDIA's roadmap confirms CPO as core AI infrastructure by 2028, driving industry-wide optical shift from copper.

Data Gravity Analysis: AI Interconnects Shift from Copper to Optical, with NVIDIA Leading with CPO-Equipped Spectrum-X Switches (Data Gravity)  
Tech Novelty ●●○○○ Proximity ●●●●● Market Impact ●●●●○

Analysis highlights interconnects as new AI bottleneck, with NVIDIA leading CPO adoption to address power and resilience.

NTT, SK Group, and Chunghwa Telecom Invest \$500 Million in 'IOWN AI Fund' to Address AI Power Consumption Challenges (Telecoms Tech News)  
Tech Novelty ●●●●○ Proximity ●●●○○ Market Impact ●●●●●

\$500M fund for NTT's IOWN photonics architecture poses a potential non-US/EU standard for light-first data transfer.

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## Recommended Actions This Week

Action recommendations based on article evaluation matrix and opportunity/threat analysis.

### ■ Immediate (this week)

- [Executive] [Strategy] Review current AI infrastructure investment plans against the accelerating shift to photonics and CPO.
- [Procurement] Identify critical optical component suppliers in your current AI/data center supply chain and assess their CPO readiness.
- [R&D;] Benchmark current AI data center power consumption against Oriole/AMD's 81% reduction claim; identify internal gaps.

### ■ Short-term (1 month)

- [R&D;] [Business Dev] Initiate technical deep-dives into thin-film lithium niobate (HyperLight) and other novel optical modulation materials.
- [Procurement] Engage with top-tier optical component suppliers (Lumentum, Coherent, Corning, etc.) to understand their CPO ramp-up plans and secure future supply.
- [Strategy] Analyze the implications of NVIDIA's 'Copper-and-Optics Roadmap' and Broadcom's 200T switch on your product development and market positioning.

### ■ Medium-long term (quarter+)

- [Legal/IP] Develop an IP strategy around next-generation optical interconnects, including potential licensing or acquisition targets in LNOI or CPO.
- [R&D;] [Executive] Establish strategic partnerships with academic institutions or startups focused on advanced photonics and optical computing.
- [Strategy] [Business Dev] Evaluate the potential impact of non-US/EU initiatives like NTT's IOWN on global standardization and market access.

# Photonics — Selected Articles

Date: 2026-06-13

Articles: 10

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- #10 Novel Material Overcomes Low-Energy Optical Modulation Barriers, Enhancing AI Scaling and Optical Networks

# Oriole Networks, in Collaboration with AMD, Commercially Deploys First Photonic AI Network in UK, Slashing Power Consumption by 81%

Published June 08, 2026   SiliconANGLE Media Inc.   USA



## OVERVIEW

Oriole Networks has achieved the world's first large-scale commercial deployment of an AI system operating entirely on a photonic network, in collaboration with AMD. This system, deployed at the UK's ARIA Scaling Inference Lab, leverages Oriole's PRISM platform with AMD Instinct GPUs and EPYC CPUs, replacing electronic switches with optical circuit switching. The initiative aims to reduce core power consumption by 81% and minimize GPU idle time to less than 1%, marking a significant leap in energy efficiency for AI infrastructures.

## IN DEPTH

### Key Findings

Oriole Networks, in a strategic collaboration with AMD, has successfully initiated the world's first large-scale commercial deployment of an AI system running entirely on a pure photonic network. This groundbreaking achievement marks a significant step towards mitigating the escalating power demands of AI data centers. The system has demonstrated an impressive 81% reduction in core power consumption and maintained GPU idle time at less than 1%, setting a new benchmark for energy efficiency and operational effectiveness in AI infrastructure.

### Technical / Clinical Details

The deployed system is built upon Oriole Networks' proprietary PRISM networking platform, meticulously integrated with AMD's high-performance Instinct GPUs and EPYC CPUs. The PRISM platform is engineered to eliminate network bottlenecks and maximize the distributed processing capabilities required for intensive AI workloads. By minimizing electrical-to-optical signal conversions, the technology dramatically reduces transmission latency and energy loss, thereby accelerating AI computations and enhancing overall power efficiency. This is particularly crucial for large-scale AI model training and inference, where maximizing GPU utilization and reducing the total cost of ownership (TCO) are paramount.

### Background & Context

The exponential growth in the scale and complexity of AI models has led to a corresponding surge in data center power consumption, making sustainable AI infrastructure a critical challenge. In response, leading technology companies, including NVIDIA, are accelerating investments in optical technologies such as Co-Packaged Optics (CPO) and Near-Packaged Optics (NPO). Oriole Networks' and AMD's collaboration stands at the forefront of these efforts by commercially deploying a pure photonic network solution. Its implementation at the UK's ARIA Scaling Inference Lab serves as a vital real-world validation of this technology's efficacy in demanding AI environments.

## Strategic Significance & Outlook

This commercial rollout unequivocally demonstrates the critical role optical communication technologies will play in the future of AI data centers. The success of Oriole Networks and AMD is expected to incentivize other industry players to pursue similar photonics-first approaches, potentially accelerating a paradigm shift in the design of AI infrastructure. As this technology gains wider adoption and standardization, it promises to usher in a new era of greener, higher-performance AI computing. This will, in turn, unlock new frontiers for AI development and foster innovation across diverse industrial sectors globally.

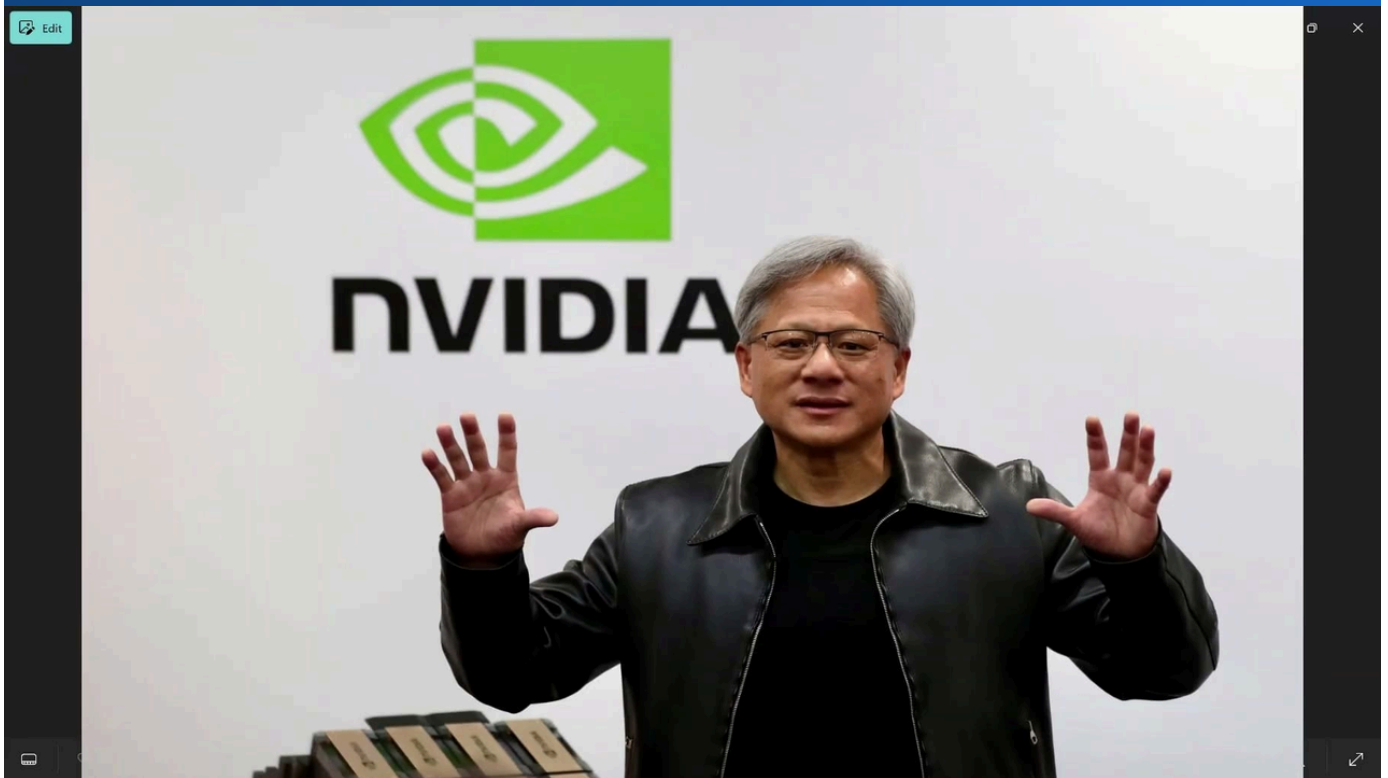
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Source: <https://siliconangle.com/2026/06/08/oriole-networks-deploys-photonic-ai-network-first-commercial-rollout-amd/>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# NVIDIA Commits \$4.5 Billion Investment in Optical Supply Chain for AI Data Centers, Anticipating 35% CPO Adoption by 2030

Published June 04, 2026 BingX Singapore



## OVERVIEW

NVIDIA has invested \$4 billion in Lumentum and Coherent, plus \$500 million in Corning, to secure next-generation silicon photonics laser supply and expand optical connectivity manufacturing capacity. This strategic investment targets Co-Packaged Optics (CPO) to significantly reduce power consumption and enhance resilience in AI data centers, with CPO adoption projected to reach 35% by 2030. The move underscores NVIDIA's commitment to optimizing the entire AI infrastructure beyond GPUs.

## IN DEPTH

### Key Findings

NVIDIA has made a monumental strategic investment totaling \$4.5 billion in the optical supply chain, earmarking \$4 billion for Lumentum and Coherent, and \$500 million for Corning. This substantial commitment aims to secure the supply of next-generation silicon photonics lasers and drastically expand manufacturing capabilities for optical interconnects. The investment primarily targets Co-Packaged Optics (CPO) technology, which is crucial for reducing power consumption and enhancing the resilience of AI data centers, with CPO adoption forecasted to hit 35% by 2030.

### Technical / Clinical Details

Co-Packaged Optics (CPO) represents a paradigm shift from traditional pluggable optical modules by integrating optical transceivers directly into the same package as switch ASICs or GPUs. This integration drastically shortens the electrical trace lengths, minimizing signal loss and subsequently leading to dramatic improvements in power efficiency and latency. NVIDIA's investment will fuel the development and widespread deployment of CPO, particularly in AI data centers where ultra-high bandwidth and ultra-low latency are indispensable. Industry projections indicate that CPO penetration could reach 35% by 2030, positioning it as a fundamental evolution for handling the explosive growth in AI workloads.

### Background & Context

The increasing complexity of AI models and the sheer volume of data they process have created unprecedented challenges in data center power consumption and thermal management. Traditional copper interconnects are increasingly unable to meet these demands, making a transition to optical technologies inevitable. NVIDIA's move is particularly noteworthy in the context of other semiconductor and networking giants like Broadcom, Intel, Marvell, and Cisco, who are also investing in silicon photonics and various optical interconnect approaches such as NPO (Near-Packaged Optics), OIO (On-board Optical Interconnect), and LPO (Linear Pluggable Optics). NVIDIA is clearly positioning itself to lead not just in GPU supply, but in the optimization of the entire AI infrastructure.

## Strategic Significance & Outlook

NVIDIA's massive investment is expected to have a profound impact across the optical communications industry, accelerating the standardization and mass production of CPO technology. This will fundamentally reshape AI data center design, enabling more powerful and sustainable computing environments. For optical component suppliers, having NVIDIA as a major customer provides a significant impetus for R&D investment and capacity expansion. In the long term, CPO is anticipated to become a cornerstone component of AI hardware, dramatically enhancing data center performance and energy efficiency. This strategic shift is set to underpin the continued evolution and broad societal deployment of AI technologies.

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Source: <https://bingx.com/en/flash-news/post/nvidia-commits-b-to-optical-supply-chain-in-as-cpo-advances-in-ai-data-centers>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# HyperLight Corp. Develops Ultra-Low-Power Thin-Film Lithium Niobate Optical Modulators Operating at 0.5V with Sub-1fJ/bit Energy Consumption

Published June 05, 2026 PatSnap (Eureka) USA



## OVERVIEW

HyperLight Corp. has developed groundbreaking optical modulators using thin-film lithium niobate (LNOI) technology, achieving ultra-low power consumption. These modulators operate at an exceptionally low voltage of 0.5V with less than 1 fJ/bit energy consumption, while maintaining a bandwidth exceeding 110GHz and optical loss below 0.1dB/cm. This breakthrough addresses material challenges in energy-efficient photonic modulators, promising significant improvements in the power efficiency of data centers and AI computing.

## IN DEPTH

### Key Findings

HyperLight Corp. has successfully developed state-of-the-art optical modulators utilizing thin-film lithium niobate (LNOI) technology, achieving ultra-low power operation. These modulators demonstrate an astonishingly low drive voltage of just 0.5V and an energy consumption of less than 1 fJ/bit, representing an order-of-magnitude improvement in efficiency compared to conventional modulators. Furthermore, they combine an extremely wide bandwidth exceeding 110GHz with exceptionally low optical loss of less than 0.1dB/cm, positioning them as a transformative solution for overcoming energy efficiency bottlenecks in next-generation high-speed optical communication and AI computing.

### Technical / Clinical Details

Thin-film lithium niobate is considered an ideal material for high-efficiency and high-speed optical modulators due to its superior electro-optic properties. HyperLight Corp. has leveraged advanced nanoscale fabrication techniques to significantly reduce the size of these modulators, minimizing both drive voltage and energy consumption. This technology fully exploits the strong electro-optic effect inherent in lithium niobate while overcoming the integration challenges historically associated with bulk lithium niobate devices. Specifically, these modulators are readily integrable into high-density photonic integrated systems, enabling high-speed and low-power control of optical signals.

### Background & Context

In data centers and AI supercomputers, as data transfer rates increase, the power consumption of optical modulators has become a dominant factor influencing overall system energy efficiency. Current silicon photonics-based modulators, while effective, still incur notable power consumption. HyperLight Corp.'s LNOI modulators address this by drastically reducing power usage, thereby supporting the expansion of AI workloads from a power perspective. This technology is closely aligned with industry trends such as Co-Packaged Optics (CPO) and Near-Packaged Optics (NPO), championed by companies like NVIDIA, which aim to accelerate the integration of optical and electronic circuits. It holds the potential to become a core technology for next-generation AI infrastructure.

## Strategic Significance & Outlook

The ultra-low-power LNOI optical modulators developed by HyperLight Corp. are poised to revolutionize AI computing, high-speed data center interconnects, and on-chip optical communication. Widespread adoption of this technology could not only significantly reduce the operational costs and environmental footprint of data centers but also enable the integration of high-performance optical communication functionalities into power-constrained applications such as edge AI devices and autonomous vehicles. In the future, this low-energy modulation technology is expected to facilitate the realization of more complex and larger-scale photonic integrated circuits, further advancing the practical implementation of optical computing.

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Source: <https://eureka.patsnap.com/report-how-to-achieve-low-energy-optical-signal-modulation-in-photonic-systems>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# Enablence Technologies Secures \$5.3 Million Order for Next-Gen 800G/1.6T Optical Communication Products for North American Hyperscalers

Published June 04, 2026   Stock Titan (Newsfile Corp.)   Canada



## OVERVIEW

Enablence Technologies Inc. has received a \$5.3 million order for FR8 wavelength management products supporting next-generation 800G and 1.6T optical transceivers for North American AI hyperscalers and HPC applications. Expected to be recognized in Q1FY27, this order leverages Enablence's Harmonic™ PLC-based technology. This technology enhances power efficiency and enables error-free, high-speed data transfer, addressing the burgeoning AI/HPC data demands. The win solidifies Enablence's position in this high-growth market.

## IN DEPTH

### Key Findings

Enablence Technologies Inc. has secured a significant customer order worth \$5.3 million for its FR8 wavelength management products, designed to support next-generation 800G and 1.6T optical transceivers. These products are destined for leading AI hyperscalers and High-Performance Computing (HPC) applications across North America. The order, projected for revenue recognition in Q1FY27, underscores the growing demand for advanced optical solutions and highlights the adoption of Enablence's proprietary Harmonic™ Planar Lightwave Circuit (PLC)-based technology. This technology promises enhanced power efficiency and error-free high-speed data transmission, crucial for meeting the escalating data demands of AI and HPC environments.

### Technical / Clinical Details

Enablence's Harmonic™ PLC-based technology employs sophisticated photonic integrated circuit designs to achieve high-precision and efficient routing and demultiplexing of optical signals. The FR8 wavelength management products are key components in Wavelength Division Multiplexing (WDM) technology, which allows multiple wavelengths to be transmitted over a single optical fiber. These components are essential for maximizing the performance of next-generation 800G and 1.6T optical transceivers. The technology is characterized by minimal optical loss, high integration density, and robust reliability. Such products are vital for improving bandwidth and energy efficiency in data centers, particularly given the enormous data volumes generated by AI workloads.

### Background & Context

The rapid evolution of AI and HPC applications has dramatically increased the demand for bandwidth and power efficiency in data center interconnects. 800G and 1.6T optical transceivers are emerging as the next-generation standards to meet these demands, escalating the importance of underlying wavelength management components. This recent order by Enablence demonstrates its capability to provide competitive technology and products in this high-growth market. As NVIDIA and other hyperscalers continue to boost their investments in optical communication infrastructure, specialized vendors like Enablence are poised to play a crucial role in enabling this expansion.

## Strategic Significance & Outlook

This \$5.3 million order represents a significant milestone for Enablence Technologies, accelerating its growth trajectory in the high-bandwidth optical communications market. It indicates the potential for its PLC-based technology to become a central component in building next-generation infrastructure for AI and HPC. As the data center upgrade cycle intensifies, demand for Enablence's products is expected to grow further. The company aims to strengthen its leadership in this expanding market through continuous technological innovation and increased production capacity, anticipating sustained revenue growth. Investors and industry stakeholders should closely monitor Enablence's developments in this critical sector.

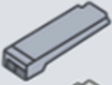











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Source: <https://www.stocktitan.net/news/ENAFF/enablence-announces-q1fy27-order-for-optical-communications-products-rme8bh9tq6kh.html>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# Signal AI Forecasts Coherent Pluggable Optics to Lead Telecom Bandwidth, with 800ZR+ Driving 'Scale-Across' AI Data Center Applications

Published June 08, 2026 | Signal AI | USA

Optics	Applications	Markets
 100ZR	 Optical-attached	 Cloud & C
 10dBm		
 +0dBm	 Router-attached	 Service Pro
 800ZR		
 300ZR+		
 500ZRx	 Standalone	 Enterprise

## OVERVIEW

Signal AI's new Pluggable Applications Forecast reveals that coherent pluggable optics are leading the telecom market in deployed bandwidth, primarily driven by AI data center interconnect demands. Specifically, 800ZR+ optical technology is widely deployed for 'scale-across' applications, extending distributed training across multi-site GPU clusters. The forecast provides a detailed analysis of various coherent revenue models, customer segments, and module types, underscoring the critical role of optical communication in the AI era.

### Key Findings

Cignal AI has released a pivotal Pluggable Applications Forecast, indicating that coherent pluggable optics are now leading the telecom market in deployed bandwidth, primarily fueled by the accelerating demands of AI data center interconnects. The report specifically highlights the widespread adoption of 800ZR+ optical technology for 'scale-across' applications, which enable the expansion of distributed training across multi-site GPU clusters. This trend underscores how the exponential growth in AI workloads is making high-bandwidth, low-latency optical communication solutions indispensable for modern computing infrastructures.

### Technical / Clinical Details

Coherent pluggable optical modules integrate advanced Digital Signal Processing (DSP) techniques and coherent modulation schemes into compact form factors. The 800ZR+ represents the latest evolution of such technology, facilitating longer-reach and higher-capacity data transmission over existing data center fiber infrastructure. This technology is critical for efficiently connecting GPU clusters across multiple data centers or geographically dispersed facilities, enabling them to function as a single, logical 'AI factory.' This approach maximizes the utilization of computational resources for AI training and supports the rapid development and deployment of a wide range of AI models by addressing the latency and bandwidth needs of such distributed systems.

### Background & Context

As AI models become increasingly complex and datasets grow to colossal sizes, the computational resources required for AI training can no longer be contained within a single data center. Consequently, 'scale-across' networking, which seamlessly connects and orchestrates GPU clusters spanning multiple sites, has become paramount. Cignal AI's forecast validates the dominance of coherent pluggable optics in this domain, clarifying why NVIDIA and other hyperscalers are rapidly accelerating their investments in optical infrastructure. Notably, NVIDIA CEO Jensen Huang's proposed 'copper-and-optics roadmap' also emphasizes the expanding role of optics in both long-haul and intra-rack connectivity within data centers.

## Strategic Significance & Outlook

Cignal AI's forecast suggests that coherent pluggable optics will play a central role in both AI data centers and the broader telecom market for the foreseeable future. High-capacity, long-reach pluggable modules like 800ZR+ are becoming determining factors in the scalability and efficiency of AI infrastructure. The proliferation of this technology is expected to create significant business opportunities for optical component manufacturers, DSP providers, and data center infrastructure vendors. Looking ahead, the development of even higher-density and lower-power coherent optical solutions is anticipated, which will enable further innovations in AI applications. Investors and industry stakeholders should closely monitor technological advancements and market growth in this critical sector.

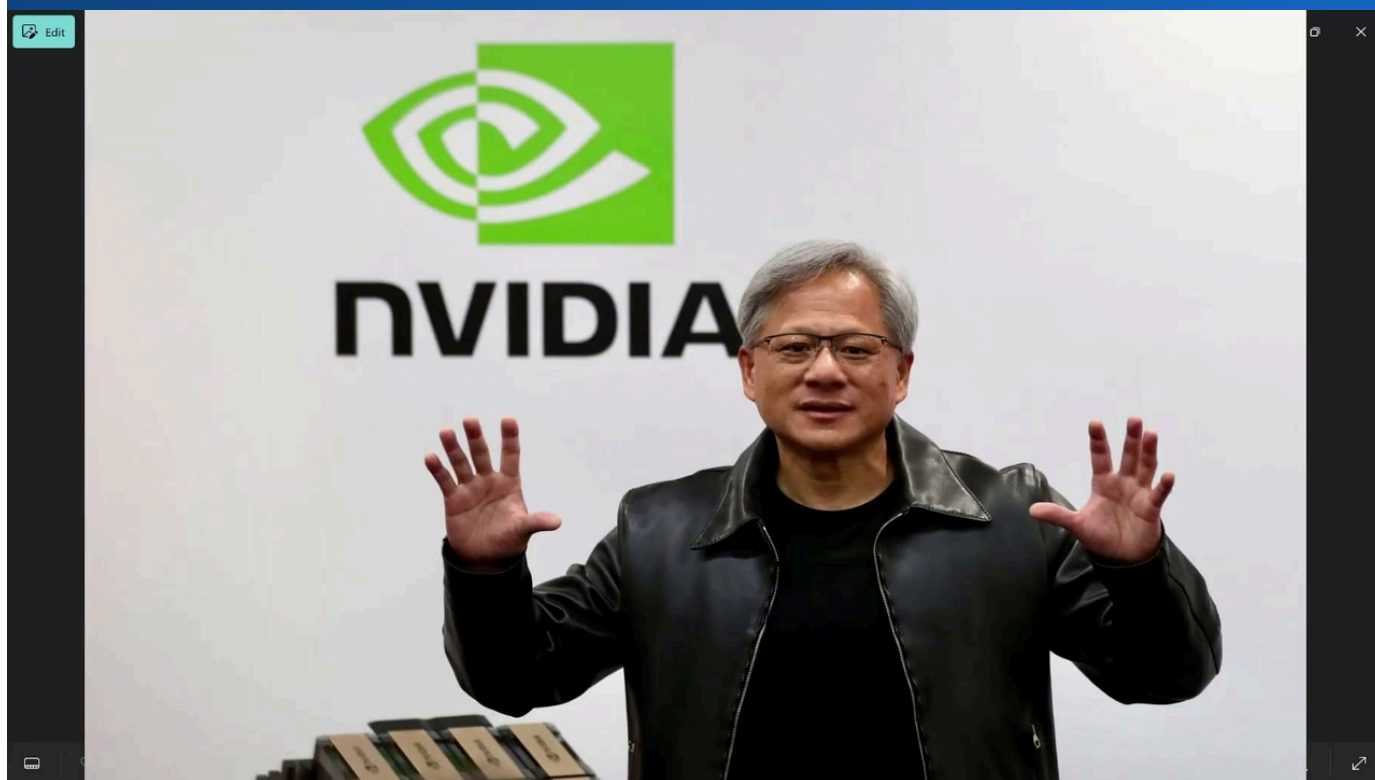
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Source: <https://cignal.ai/2026/06/introducing-the-pluggable-applications-forecast/>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# NVIDIA CEO Jensen Huang Unveils 'Copper-and-Optics Roadmap,' Positioning CPO as Core AI Infrastructure by 2028

Published June 04, 2026 Futubull Community Hong Kong



## OVERVIEW

NVIDIA CEO Jensen Huang presented the 'Copper-and-Optics Roadmap' for AI infrastructure at COMPUTEX TAIPEI 2026, signaling a shift from copper to optical fiber for data center interconnects. The roadmap predicts co-existence of copper and optical interconnects until 2027, with Co-Packaged Optics (CPO) becoming widely adopted for scale-up connections in the Feynman architecture by 2028. This transition, driven by increasing demand for 800G/1.6T optical modules, aims to resolve power efficiency and bandwidth challenges in AI data transfer.

### Key Findings

NVIDIA CEO Jensen Huang, during COMPUTEX TAIPEI 2026, unveiled a visionary 'Copper-and-Optics Roadmap' that will define the future of AI infrastructure. This roadmap signals a strategic pivot in data center interconnects, moving from traditional copper cabling to advanced optical fiber solutions. Specifically, Co-Packaged Optics (CPO) is projected for widespread adoption in scale-up connections within the Feynman architecture by 2028, becoming a cornerstone technology. This shift is critical for addressing the escalating challenges of power efficiency and bandwidth density driven by the relentless growth of AI workloads.

### Technical / Clinical Details

The 'Copper-and-Optics Roadmap' delineates that while copper will continue to serve for short-reach connections, optical technologies will assume a dominant role for longer-distance intra-rack and system-level interconnects. CPO technology involves integrating optical transceivers directly into the same package as switch or GPU chips, dramatically shortening electrical trace lengths. This minimizes signal attenuation and power consumption. The successful execution of this roadmap is propelled by the accelerating demand for 800G and 1.6T optical modules. NVIDIA's Feynman architecture is explicitly designed to incorporate CPO as a standard component, thereby optimizing the performance and energy efficiency of AI supercomputers.

### Background & Context

The rapid evolution of AI has imposed unprecedented pressure on data center power consumption and cooling capabilities. Traditional electrical interconnects are increasingly facing limitations regarding signal integrity over high bandwidths and longer distances, leading to significant power losses. Recognizing this, NVIDIA has made substantial investments in key optical component manufacturers such as Lumentum, Coherent, and Corning, to fortify its optical supply chain. This comprehensive strategy extends beyond merely supplying GPUs, aiming to optimize the entire AI infrastructure to sustain future AI growth. Competitors like Broadcom and Intel are also intensifying their efforts in optical technologies, highlighting an industry-wide recognition of this critical transition.

## Strategic Significance & Outlook

CEO Jensen Huang's 'Copper-and-Optics Roadmap' provides a clear blueprint for the future design principles of AI data centers, set to profoundly impact the optical communications industry. The prediction of widespread CPO adoption by 2028 signals substantial business opportunities for optical component manufacturers and related technology providers in the coming years. Realizing this strategic transition will enable AI systems to achieve faster, more energy-efficient data transfer, accelerating the training and deployment of increasingly large and complex AI models. This will further catalyze innovation in AI technologies and expand their application across a multitude of industrial sectors.

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Source: [https://q.futunn.com/feed/116690920669588?futsource=news\\_topic\\_page\(=en-us](https://q.futunn.com/feed/116690920669588?futsource=news_topic_page(=en-us)

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# Broadcom Advances Next-Gen 200 Terabit Switch Tapeout with 1.6T DSP and CPO Technology, Targeting \$100 Billion in AI Revenue

Published June 04, 2026   Techstock01 | Substack   USA



## OVERVIEW

Broadcom is progressing with the tapeout of its next-generation 200 terabit switch, championing Co-Packaged Optics (CPO), 1.6 terabit DSPs, CW, and EML lasers as industry standards. The company is strategically focused on delivering computational power to major AI labs via its AI XPV platform, planning to deploy over 20 gigawatts of compute capacity by 2028. Broadcom aims for an ambitious \$100 billion in AI-related revenue by 2027, solidifying its leadership in the AI infrastructure market.

## IN DEPTH

### Key Findings

Broadcom is making significant strides in next-generation networking technology with the tapeout of its 200 terabit switch, actively promoting Co-Packaged Optics (CPO), 1.6 terabit Digital Signal Processors (DSPs), Continuous Wave (CW) lasers, and Electro-absorption Modulated Lasers (EMLs) as emerging industry standards. The company is strategically focused on providing compute capacity to leading AI labs through its AI XPV platform, with plans to deploy over 20 gigawatts of compute capacity by 2028. This initiative firmly positions Broadcom as a crucial enabler in the AI infrastructure market, contributing to its ambitious goal of achieving \$100 billion in AI-related revenue by 2027.

### Technical / Clinical Details

Broadcom's 200 terabit switch is a high-performance networking solution designed to handle the explosive data traffic within AI data centers. The adoption of CPO technology dramatically shortens the electrical pathways between the switch chip and optical transceivers, significantly reducing signal loss and power consumption. The 1.6 terabit DSP is engineered to execute complex signal processing required for high-speed data transmission in real-time, enhancing data integrity and throughput. CW lasers and EMLs are essential components for optical signal generation and modulation, providing highly efficient and stable light output. This combination of technologies delivers the ultra-high bandwidth, low latency, and superior power efficiency demanded by contemporary AI workloads.

### Background & Context

The evolution of AI is forcing a fundamental transformation in data center architectures, with network interconnects frequently becoming a bottleneck. The industry-wide shift towards optical technologies is accelerating, evidenced by NVIDIA's substantial investments in the optical supply chain. Broadcom's strategy aims to merge its strengths in semiconductor design with its optical technology expertise to become a key enabler for data centers in the AI era. CPO technology offers superior performance and efficiency compared to traditional pluggable modules, leading to rapid adoption by hyperscalers. By proactively addressing these market shifts, Broadcom seeks to establish a formidable competitive advantage.

## Strategic Significance & Outlook

Broadcom's intense focus on 200 terabit switches, CPO, and 1.6 terabit DSPs is set to further solidify its dominant position in the AI infrastructure market. The plan to deploy over 20 gigawatts of compute capacity by 2028 demonstrates the company's deep commitment to the core of the AI ecosystem. While the \$100 billion AI-related revenue target is ambitious, Broadcom's full-stack optical and AI infrastructure solutions are well-positioned to contribute significantly to achieving this goal. This strategic direction reiterates that optical communication technology is an indispensable element in shaping the future of AI and will drive further convergence between the semiconductor and optical communication industries.

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Source: <https://techstock01.substack.com/p/broadcom-the-stock-is-falling-14>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# Data Gravity Analysis: AI Interconnects Shift from Copper to Optical, with NVIDIA Leading with CPO-Equipped Spectrum-X Switches

Published June 08, 2026 Data Gravity USA



## OVERVIEW

Data Gravity's analysis indicates that frontier AI performance constraints are shifting from accelerator supply to interconnects, highlighting challenges in chip-to-chip, GPU-to-GPU, and rack-to-rack connectivity. NVIDIA is prioritizing optical technology through significant investments in optical suppliers and the deployment of its Spectrum-X Photonics SN6800 switch, featuring Co-Packaged Optics (CPO). This strategy aims to replace copper interconnects and address power consumption and resilience issues. Diverse optical alternatives, including silicon photonics, VCSEL-based Near-Packaged Optics, and THz radio-over-wire, are becoming practical in 2026.

## IN DEPTH

### Key Findings

According to a comprehensive analysis by Data Gravity, the primary bottleneck impeding the performance of cutting-edge AI systems has shifted from traditional accelerator supply to interconnect capabilities. This transition has spawned new challenges in chip-to-chip, GPU-to-GPU, and rack-to-rack connectivity within data centers. NVIDIA is positioning optical technology at the heart of its solutions, demonstrated by substantial investments in optical suppliers and the deployment of its Spectrum-X Photonics SN6800 switch, which incorporates Co-Packaged Optics (CPO). This strategy aims to replace copper interconnects, significantly reduce power consumption, and enhance system resilience.

### Technical / Clinical Details

AI workloads demand terabit-scale data transfer and microsecond-level latency, pushing conventional copper interconnects to their limits in terms of both performance and power efficiency. CPO technology addresses this by directly integrating optical transceivers with switch chips or GPU packages, drastically shortening the electrical signal paths. This approach leads to significant reductions in signal loss and power consumption. NVIDIA's Spectrum-X Photonics SN6800 switch, by implementing CPO, substantially boosts data center bandwidth density and optimizes the performance of AI clusters. Furthermore, a diverse array of optical technologies, including silicon photonics, VCSEL-based Near-Packaged Optics (NPO), and Terahertz (THz) radio-over-wire, are becoming practical and commercially viable in 2026, expanding the options for advanced AI interconnects.

### Background & Context

As AI models scale from gigabytes to terabytes and even petabytes, data center power consumption has become a major sustainability concern. NVIDIA CEO Jensen Huang's 'Copper-and-Optics Roadmap' outlines an industry-wide direction for addressing these challenges. NVIDIA's investment in the optical supply chain, engaging key players like Lumentum, Coherent, and Corning, is driving a fundamental transformation of AI infrastructure. This move is particularly significant given that competitors such as Broadcom and Intel are also pursuing their distinct silicon photonics strategies, indicating a broad industry consensus on the critical role of optics.

## Strategic Significance & Outlook

The shift from copper to optical technologies for interconnects in the AI era is an irreversible trend, and Data Gravity's analysis confirms the acceleration of this transition. NVIDIA's deployment of CPO-equipped switches is paving the way for optical technology to become the standard in AI data centers. As silicon photonics and CPO/NPO solutions mature, data center energy efficiency and scalability are expected to improve dramatically. This will, in turn, enable the development and deployment of even larger and more complex AI models, further expanding the impact of AI technology across industries and society. Investors and technologists should closely monitor the innovations and market dynamics in this pivotal sector.

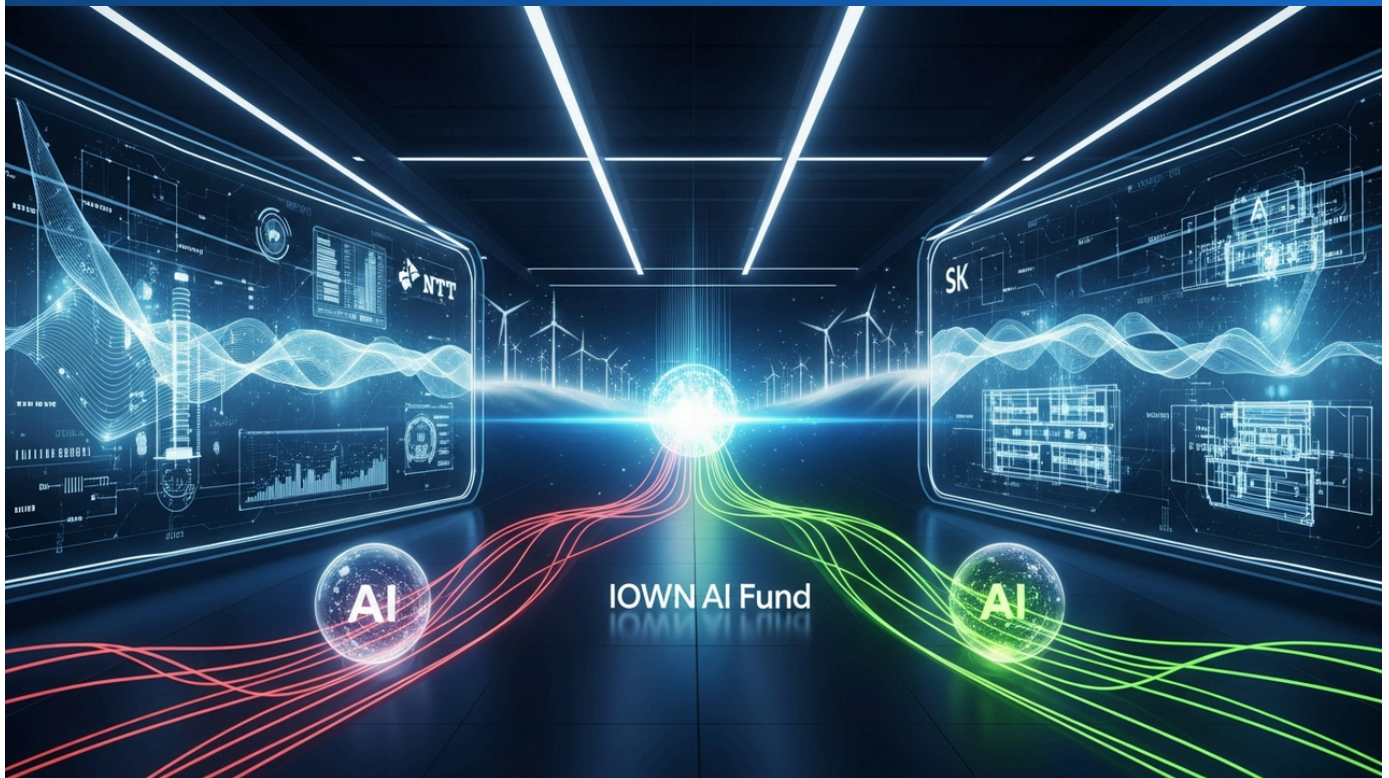
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Source: <https://www.datagravity.dev/p/light-radio-and-the-race-to-replace>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# NTT, SK Group, and Chunghwa Telecom Invest \$500 Million in 'IOWN AI Fund' to Address AI Power Consumption Challenges

Published June 10, 2026   Telecoms Tech News   UK



## OVERVIEW

NTT, SK Group, and Chunghwa Telecom have established the \$500 million 'IOWN AI Fund' to address the power consumption challenges in AI infrastructure, based on NTT's Innovative Optical and Wireless Network (IOWN) photonics architecture. The fund aims to commercialize a light-first data transfer approach, maintaining data in the optical domain from core to edge to dramatically reduce power consumption and latency in AI data centers. With NTT holding the architecture's IP and the IOWN Global Forum acting as the standardization body, this initiative is expected to have widespread industry impact.

## IN DEPTH

### Key Findings

NTT, South Korea's SK Group, and Taiwan's Chunghwa Telecom have collectively established the 'IOWN AI Fund' with a total commitment of \$500 million. This strategic investment is aimed at tackling the pressing power consumption issues within AI infrastructure, leveraging NTT's innovative Innovative Optical and Wireless Network (IOWN) photonics architecture. The fund's primary objective is to commercialize a light-first approach to data transfer, ensuring that data remains in the optical domain from the core network to the terminal. This is expected to lead to dramatic reductions in both power consumption and latency within AI data centers, offering a sustainable solution to growing demands.

### Technical / Clinical Details

The IOWN (Innovative Optical and Wireless Network) architecture is centered around an All-Photonics Network (APN), designed to minimize electrical-to-optical conversions. This approach aims for a significant increase in transmission capacity, minimized end-to-end latency, and dramatic improvements in power efficiency. Specifically, APN bypasses the energy losses and delays inherent in conventional electrical signal processing, enabling data transmission at nearly the speed of light. The technologies promoted through this fund will build a sustainable and high-performance infrastructure capable of supporting the exponential growth of AI models and the associated massive data traffic and power demands.

### Background & Context

The explosive proliferation of generative AI has driven data center power consumption to unprecedented levels, posing severe challenges in terms of both environmental impact and operational costs. Traditional data centers suffer from energy loss and latency due to repeated conversions between electrical and optical signals. While companies like NVIDIA are also making substantial investments in optical technologies, NTT's IOWN offers a more comprehensive approach by envisioning an entire network composed of optical components. NTT's retention of the IOWN architecture's intellectual property and the IOWN Global Forum's role in standardizing its framework indicate the potential for this technology to achieve significant international influence.

## Strategic Significance & Outlook

The \$500 million investment through the 'IOWN AI Fund' is poised to accelerate the commercialization of NTT's IOWN concept, bringing about a major transformation in the power efficiency and performance of AI data centers. Should this light-first infrastructure be widely adopted, it will strongly support the sustainable development of AI and enable faster, more efficient data processing. In the long term, IOWN is expected to become the foundation of global digital infrastructure, supporting various next-generation services such as smart cities, autonomous driving, and remote healthcare. This fund will play a critical role in driving the new wave of innovation fostered by the convergence of AI and optical communication technologies.

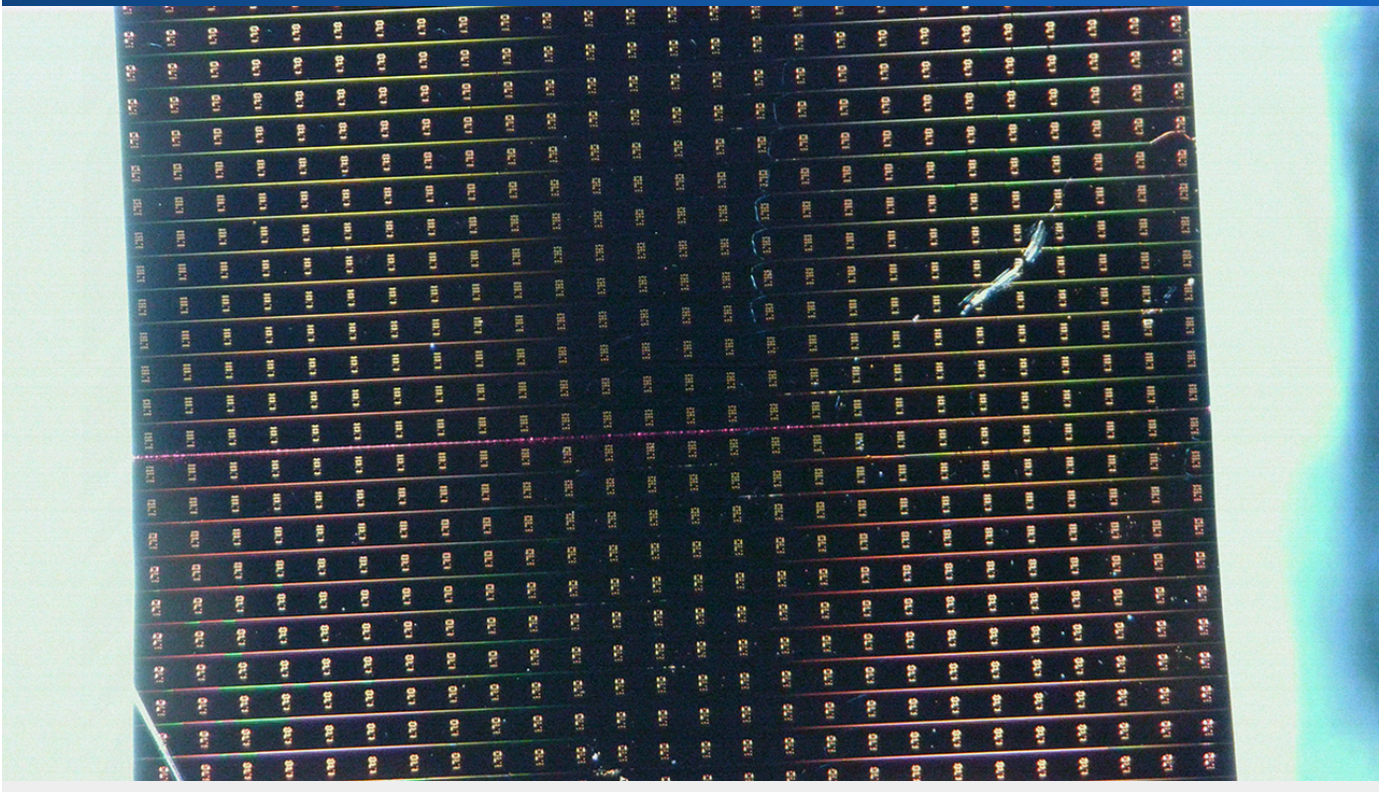
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Source: <https://www.telecomstechnews.com/news/ntt-sk-group-bet-500m-photonics-to-solve-ai-power-drain/>

Collected: June 12, 2026 | Automated Research System (Gemini API)

# Novel Material Overcomes Low-Energy Optical Modulation Barriers, Enhancing AI Scaling and Optical Networks

Published June 04, 2026 The Brighter Side News USA



## OVERVIEW

Researchers have developed a novel material that enables low-energy optical signal modulation, overcoming a major barrier to AI scaling. This innovative material functions without requiring electric field polarization or periodic patterning, allowing for direct integration of new functionalities into photonic chips. This significantly enhances the performance of energy-efficient computing and optical networks, paving the way for further AI advancement and widespread adoption.

## IN DEPTH

### Key Findings

Researchers have successfully developed a novel material that addresses a critical challenge in AI scaling: low-energy optical signal modulation. This breakthrough material possesses unique properties that allow it to function without the traditional requirements of electric field polarization or complex periodic patterning. This capability enables the direct and straightforward integration of advanced functionalities into photonic chips, thereby dramatically improving the performance of energy-efficient computing and optical networks. This discovery is profoundly significant for the sustainability and scalability of AI infrastructure.

### Technical / Clinical Details

The core innovation of this new material lies in its intrinsic electro-optic properties, which enable efficient optical signal modulation without the need for complex external manipulations. Many conventional electro-optic materials require high voltages, specific crystal structures, or external electric field application for signal modulation. However, this novel material relaxes these constraints, facilitating simpler chip designs and operation at significantly lower power. Such characteristics are vital for substantially improving energy efficiency and mitigating thermal issues, particularly in high-speed interconnects within data centers and on-chip optical communication for AI accelerators.

### Background & Context

The rapid advancement of AI has led to an exponential increase in data processing demands and corresponding energy consumption. Specifically, the processing and transmission of electrical signals in data centers constitute a major portion of power consumption, raising sustainability concerns and operational costs. Optical communication technologies, such as silicon photonics and thin-film lithium niobate (TFLN) platforms, are considered promising solutions to these challenges, but the energy efficiency of modulators remains a crucial research area. This new material represents a technological innovation that fundamentally improves the efficiency of optical signal processing within this context.

## Strategic Significance & Outlook

The development of this novel material holds the potential for wide-ranging impacts across the fields of AI computing and optical networking. More energy-efficient photonic chips could not only reduce data center operating costs and the environmental footprint of AI workloads but also accelerate the adoption of AI in new applications such as power-constrained edge devices and autonomous vehicles. Furthermore, the ease of integration of this material is expected to simplify the design and manufacturing processes of photonic integrated circuits, fostering the development of more complex and higher-performing optical systems. In the long term, this technology could bring practical optical computing closer to reality, serving as a foundational technology for future digital societies.

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Source: <https://www.thebrighterside.news/post/new-material-tackles-one-of-the-biggest-barriers-to-scaling-artificial-intelligence/>

Collected: June 12, 2026 | Automated Research System (Gemini API)