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News Release

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## **OFS LABORATORIES UNVEILS NEW RESEARCH IN ADVANCED CONCEPTS FOR ALL OPTICAL NETWORKS**

### ***OFS Scientists to Present Unprecedented 33 Papers at OFC 2003***

**OFC, Booth 2141, Atlanta, GA, March 27, 2003** – OFS, designer, manufacturer and supplier of leading edge fiber optic products, today announced the latest research developments from OFS Laboratories. With an unprecedented 33 papers presented at OFC 2003, OFS maintains its position as an industry leader in scientific advances that lead to next generation fiber products.

“The history of fiber optics is intertwined with the contributions of OFS scientists,” said Dave Kalish, Chief Technical Officer, OFS. “Their latest innovations are a testament to that tradition, one that leads to new and exciting photonic products that are emulated throughout the industry.”

OFS is also proud to announce that Kenneth Walker, President of Specialty Photonic Devices for OFS, was selected as an Optical Society of America (OSA) Fellow. A citation will be presented to Walker at OFC 2003.

Walker was selected for membership based on his contributions to research and development, business leadership, and pioneering advances in optical fiber technology. The number of Fellows is limited by OSA bylaws to 10% of the total membership.

### **Grating Based Optical Devices**

OFS is pioneering advances in grating based optical devices that help reduce system cost while enabling higher capacity and longer reach. These commercially available prototypes include tunable dispersion compensators based on fiber Bragg gratings. The devices extend to multichannel operations, offering upgrades to multiple WDM channels, and a low cost grating-based optical channel monitor that is an alternative to high-end, expensive WDM channel monitors.

Other advancements in grating based optical devices include the ability to control and reduce group-delay ripple, a major impairment in grating-based dispersion compensators, and advancements in devices using higher-order optical modes in fibers, including adjustable dispersion compensators. This latter achievement allows fiber-based dispersion compensation modules to be set to desired levels of compensation, providing significant savings in inventory costs.

### **New Optical Sources**

Researchers have also created novel optical sources based on supercontinuum generation that offer significantly higher power in continuous operation over wide wavelength range and extremely wide, coherent pulsed operation. Applications of these new sources include test and measurement devices, spectroscopy, medical tomography and frequency metrology (clocks). These developments could pave the way for application of telecommunications technology into other applications and industries.

### **Microstructured Optical Fibers**

Papers presented also shed new understanding of microstructured optical fibers, including bandgap fibers - an exciting new class of fibers for photonic devices and transmission fiber applications. Several papers discuss the modal properties of light and the dispersion characteristics, aimed at developing novel devices for controlling signals.

### **Post Deadline Submissions**

Researchers will present an additional five papers which were accepted for the post deadline session. These include a paper highlighting the discovery of a new phenomenon in optical fiber that alters the refractive index profile of the fiber. This discovery allows improved fiber characterization and can be used to create new optical devices.

Two papers demonstrating record transmission results over OFS' TrueWave® REACH fiber were submitted to the OFC post deadline session. The first paper reports transmission of forty 10-Gb/s channels over 2400 km using 200-km spans, at least twice the conventional span length used in terrestrial systems. The experiment demonstrates that with optimal bi-directional Raman pumping, the number of optical repeaters can be halved, helping to reduce operating expenses for medium- to long-haul systems. The 2400-km transmission result is twice as far as previously demonstrated with 200-km spans and represents a system operating with real margins, over distances suitable for at least 50% of the connection distances in an optical network covering the U.S.

The second paper reports transmission of 6.4-Tb/s capacity (160 40-Gb/s channels) over 3200 km of TrueWave REACH fiber with 100-km all-Raman amplified spans. Carrier-suppressed, return-to-zero, differential-phase-shift-keyed modulation format with strong signal filtering and balanced detection was a key to achieving the 6.4-Tb/s capacity with 0.8-bit/s/Hz spectral efficiency. The experiment, using new iRainbow<sup>®</sup> co-pumps from Furukawa, and also involving collaborators from Lucent Technologies/Bell Labs, demonstrates a new record capacity-distance product of 20 Pb-km/s for 40-Gb/s terrestrial transmission.

These ground-breaking experiments were also enabled by continued advances in the fabrication of TrueWave REACH fiber. OFS is improving specifications on TrueWave REACH fiber to better support the engineering of Raman-amplified systems. With a new upper limit on attenuation at the “water peak” of 0.5 dB/km, TrueWave REACH has the tightest specification in the industry for an NZDF long haul fiber. Low water peak loss, along with moderate effective area and tight tolerance on mode field, is important for efficient and consistent Raman gain. Variability in TrueWave REACH mode field diameter at 1550nm has been reduced from +/- 0.5 to +/- 0.4 microns, giving it the most tightly specified mode field of any Raman-enabled fiber.

## **About OFS**

OFS is a world-leading designer, manufacturer and provider of optical fiber, optical fiber cable, connectivity, FTTx and specialty photonics solutions. Our marketing, sales, manufacturing and research teams provide forward-looking, innovative products and solutions in areas including Telecommunications, Medicine, Industrial Automation, Sensing, Government, Aerospace and Defense applications. We provide reliable, cost effective optical solutions to enable our customers to meet the needs of today’s and tomorrow’s digital and energy consumers and businesses.

OFS’ corporate lineage dates back to 1876 and includes technology powerhouses such as AT&T and Lucent Technologies. Today, OFS is owned by Furukawa Electric, a multi-billion dollar global leader in optical communications.

For more information, please visit [www.ofsoptics.com](http://www.ofsoptics.com).

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