

# CIRTEMO™

Cirtemo is a new start-up company which is commercializing a powerful and patented optics platform called Multivariate Optical Computing (MOC). The MOC platform solves many problems associated with classic optical coating technologies and has broad applicability to large and growing markets.

## Background:

In 2004, Jason Williamson licensed the MOC platform, from the University of South Carolina and founded Ometric Corporation. At the core the MOC platform are patented optical filters, called Multivariate Optical Elements (MOEs), which are encoded to detect/measure complex chemical compounds/attributes. Ometric manufactured the first commercial optical systems based on MOEs. Ometric focused on commercializing the MOE platform for real-time and in-line chemical monitoring and process control of industrial processes.

Ometric successfully commercialized the MOE technology in a wide variety of large industrial sectors, including pharmaceuticals, chemicals, pet nutrition, mining, food and many others. Ometric was sold to Halliburton in 2011. Halliburton is only focused on using the MOE technology platform exclusively for oil and gas (specifically energy). As a part of the transaction, Halliburton granted USC an exclusive, worldwide, perpetual license for all industries and applications outside of oil and gas. Although the exact sale price of Ometric is considered confidential, Halliburton paid over 8 figures (\$XXM) for the company, and the transaction generated the largest royalty payment in history ever paid to the University of South Carolina (\$2.75M).

In April of 2011 Mr. Williamson founded Cirtemo, a South Carolina C-corporation. In June 2012, Cirtemo secured an exclusive, worldwide, perpetual license from USC to commercialize the MOC platform (25+ issued patents and 14+ pending patents) once again to all industries and applications outside oil and gas.

## Technology:

Multivariate Optical Elements enable optical systems to detect/measure specific chemicals/attributes (**that cannot be done with traditional optical filter technologies**) and/or **achieve better performances** from an existing optical system (higher accuracies, lower detection limits, faster with higher throughput, reduced crosstalk, etc). MOEs can be integrated into almost any system where optical filters are used today, such as sensors, microscopes, lab instrumentation, medical devices etc. The MOE technology platform is well protected, and is comprised of over 25+ issued patents, 14+ patent pending and is based on 15 years of research and over \$15 Million in federal funding and private venture capital.

## Business Model:

Cirtemo's primary core value is designing MOEs for applications and systems. Cirtemo has developed a new business model to more efficiently commercialize the MOE platform. Cirtemo is currently building relationships with two primary groups of partners; Optical Filter and Component Manufacturers (OFCMs) and Optical System Manufacturers (OSMs).

The value proposition for optical filter manufacturers and optical system manufacturers to partner with Cirtemo is as follows: The economic landscape for OFCMs and OSMs is extremely competitive. OFCMs and OSMs are seeking ways to differentiate their offerings in the marketplace, while also leveraging their existing capital investments in equipment, personnel and market channels. The MOE platform enables the customers of OFCMs and OSMs with the ability to improve/extend the use/performance of current product platforms/systems (w/o major modifications) and without major research and development efforts. Through licensing and/or acquisition, Cirtemo's MOE platform can be leveraged as a key differentiator (with a powerful, well protected IP position) in a heavily commoditized marketplace.

## Market:

OFCMs and OSMs have deep relationships with customers who use and understand optical filter based systems. There are over 50+ OFCMs and 120+ OSMs worldwide. OFCMs average revenues range from \$5M to \$200M+. The market is dominated by several large players (JDSU, Materion, L-3) and many smaller players (Ocean Thin Films, La Croix Optical, Artemis-Optical). OSMs usually focus on specific industries, and revenues range from \$5M to \$300M+. The larger OSM players include companies like ABB (industrial), Agilent (life Science), Covidian (medical devices) and Excelitas (detectors).