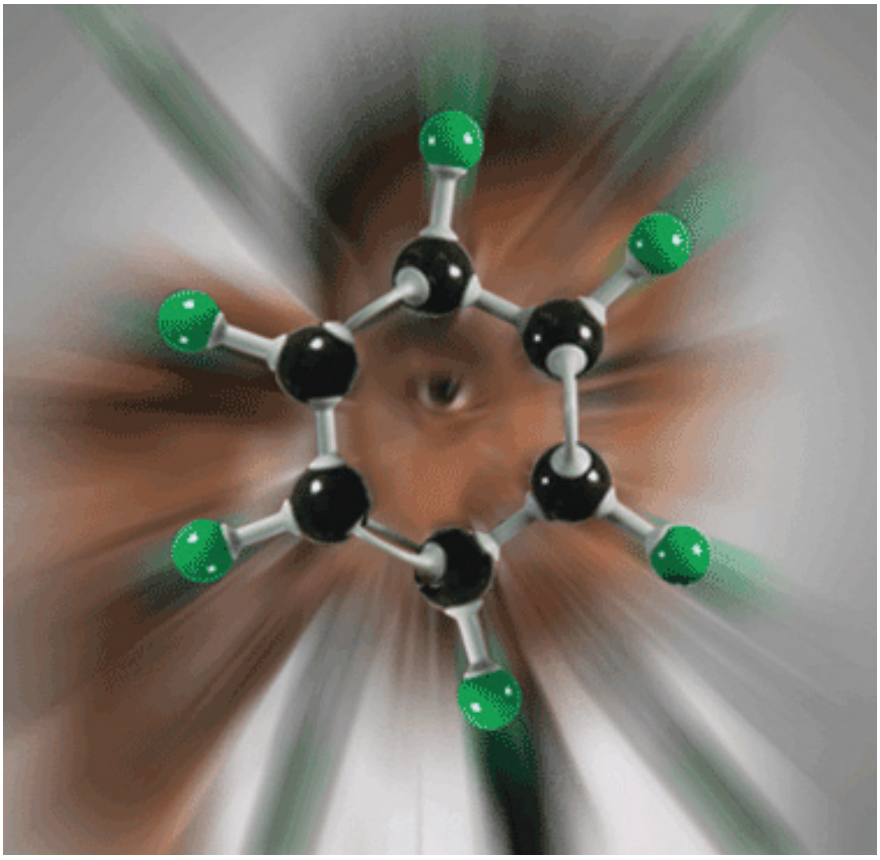


Oklahoma Nanotechnology Report

Oklahoma: Leading the way in nano-enhanced products

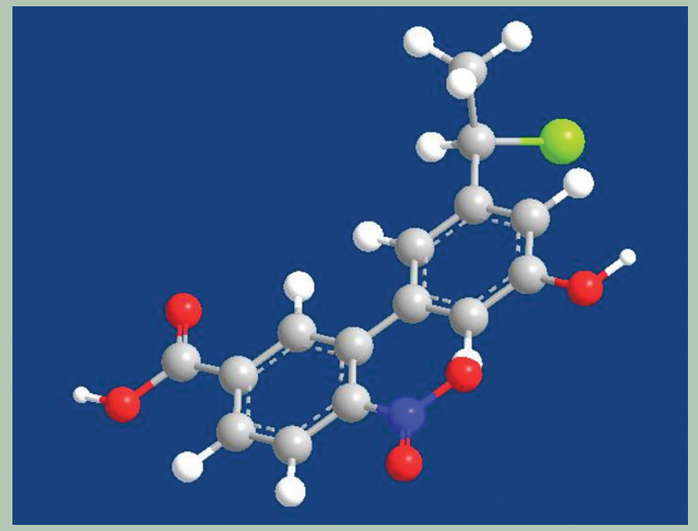
OCAST
Oklahoma Center for the Advancement of Science and Technology

The ONI™
Oklahoma NanoTechnology Initiative
Technology Initiatives LLC

About the ONI

The Oklahoma Nanotechnology Initiative is a legislative initiative funded by the Oklahoma Center for the Advancement of Science and Technology, which:

- encourages businesses to utilize applications of nanotechnology to create new or improved products
- creates statewide awareness of the emerging nanotechnology industry and its potential impact on Oklahoma
- promotes Oklahoma and its resources as a valuable site for nanotechnology industry location
- and serves as a clearing-house of information to the academic, financial, industrial and business communities.



More than $18 million of new revenue in Oklahoma has resulted from funding 20 ONAP projects

TheONI™
Oklahoma NanoTechnology Initiative
Technology Initiatives LLC

contents

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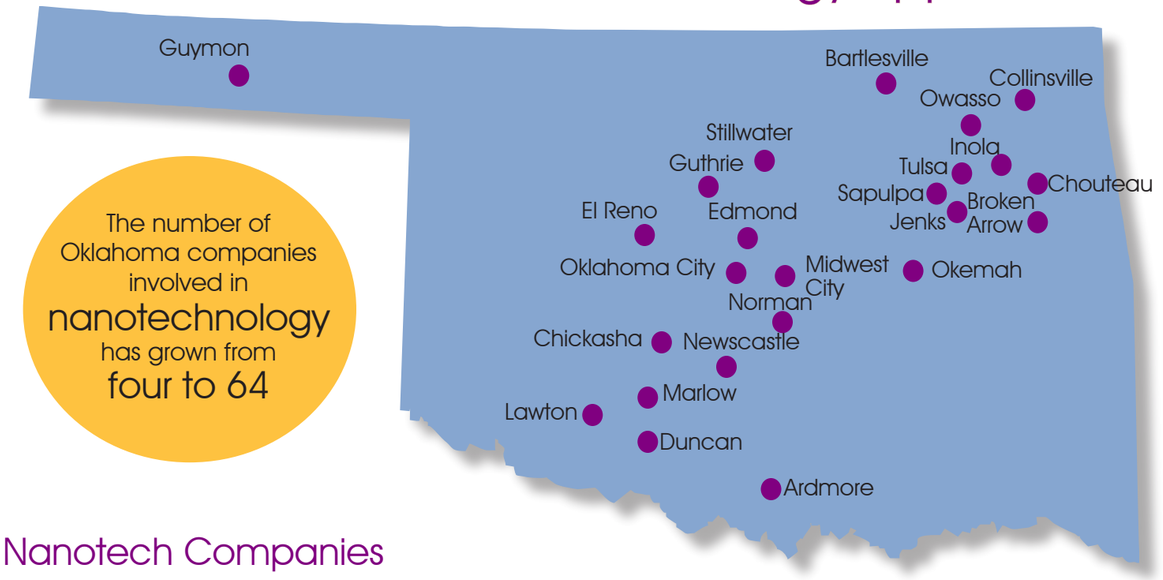
Oklahoma Companies Involved in Nanotechnology Applications



The number of Oklahoma companies involved in nanotechnology has grown from four to 64

Nanotech Companies

Ardmore
Amethyst Research Inc.
Southwest Silicon Technology

Bartlesville
ConocoPhillips

Broken Arrow
Access Optics
AMETEC Oil and Gas
Da-Pro Rubber Inc.
R.L. Hudson & Co.

Chickasha
Industrial Compounding

Chouteau
Non-Metallic Sciences Inc.

Collinsville
Ten-Nine Technologies LLC

Duncan
Halliburton Duncan Manufacturing Center

Edmond
NanoBioMagnetics Inc.
NanoMed Targeting Systems
XetaComp Nanotechnologies LLC

El Reno
Gemini Industries Inc.

Guthrie
Adsorbed Gas Services

Guymon
BioTec Fuels & Chemicals LLC

Inola
Artison Corp.

Jenks
NanoRidge
Victory Oil LLC

Marlow
Wilco Machine & Fabrication Inc.

Midwest City
SensorCorr LLC

Newcastle
Anautics Inc.

Norman
3DICON Inc.
911 for CEOs Inc.
Bijhem Scientific Inc.
EKIPS Technologies Inc.
Glomics
NanoLight Inc.
NewMan Technologies Inc.
OncoBio Tech LLC
Phononic Devices
SouthWest NanoTechnologies Inc.
SyntheSized NanoCoatings Inc.

Oklahoma City
Anautics Inc.
Cass Polymers
Charlesson LLC
Mintiva
Nantiox Pharmaceutics Corp.
OrthoCare Innovations
Revelation LLC
Rupture Pin Technology Inc.
Swaasth Inc.
The Advanced Composite Group

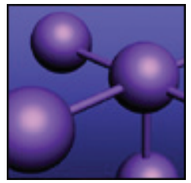
Okemah
Lumatech Corp.

Owasso
Advanced Plastics

Sapulpa
Kemmx Corp.

Stillwater
AIM Technologies
Frontier Electronic Systems Corp.
ICx/Technologies
RK Composites Inc.
XploSafe LLC

Tulsa
Advanced Composites Group Inc.
ARC Outdoors
Circle Operations Group
First Wave Aviation MRO Inc.
Geophysical Research Co.
MotorGuide Marine
NDRS Technologies
Revelation RFIC Inc.
Topog-E Gasket Co.
US General Inc.
Veracity Technology Solutions



The Oklahoma Nanotechnology Applications Project (ONAP), administered by OCAST and promoted by ONI, provides funding, technical support and later-stage assistance for nanotechnology applications. These five companies were awarded ONAP grants for FY2010:

Broken Arrow AMETEK Oil and Gas

Ametek Oil and Gas is a group of companies specializing in meeting the unique measurement and instrumentation needs of the oil and gas industry.

Sample Applications
- Engine corrosion
- Acid rains
- Catalytic converter deterioration
- Inefficient engine combustion
- Particulate formation leading to air pollution and greenhouse effect

AMETEK® OIL & GAS

Oklahoma Nanotechnology Applications Project
In collaboration with Oklahoma State University, Ametek Oil & Gas is developing a hand-held sensor device capable of detecting sulfur impurities in gasoline and diesel down to parts-per-billion levels. The sensor's active element is a layer of silver nanoparticles. A novel nanofabrication technique synthesizes the nanoparticles on a semiconductor thin film.

"Oklahoma has a strong history in oil and gas related technology. We are extremely proud to be a part of the effort that is creating the next generation of instrumentation using Oklahoma talent to satisfy needs all over the world."
Brian Ainley, Director, Marketing and Business Development, AMETEK Oil and Gas

http://www.ametekoilandgas.com

Norman Bijhem Scientific Inc.

Bijjhem Scientific Inc. is an innovation-centered technology development corporation with a primary focus in nanomaterial-based applications.

Sample Applications
- Air purification
- Water treatment
- Oil spills
- Organic chemical spills
- Photocatalytic paints
- Photocatalytic fabrics

BIJHEM SCIENTIFIC INC.

Oklahoma Nanotechnology Applications Project Using biochemistry and genetic engineering to grow bacteria expressing nanostructures, Bijhem Scientific is developing a self-regenerating catalyst with an increased efficacy over commercial catalysts for the absorption and destruction of organic contaminants in the environment.

"ONAP funding has allowed Bijhem Scientific Inc. to retain personnel and solicit federal funds to amplify its technology trajectory towards the development and manufacture of novel materials."
Bijo Mathew, President and Co-founder, Bijhem Scientific Inc.

http://bijhem.com

Oklahoma City Charlesson LLC

Charlesson LLC is actively engaged in the development of therapeutics for treating debilitating ophthalmic diseases.

Sample Applications
- Glaucoma
- Age-related macular degeneration
- Diabetic retinopathy
- Ocular Inflammation
- Angiogenesis (growth of new capillary blood vessels)
- Systemic diabetes

Charlesson

Oklahoma Nanotechnology Applications Project
Charlesson LLC is developing a nano-emulsion-based formulation of anti-glaucoma drug for improved topical administration. The stable, clinically acceptable ophthalmic nano-emulsion would result in a lower drug dose, improved ocular distribution profile and possible improvement of the dosage regimen for patients suffering from glaucoma.

"ONI has enabled Charlesson LLC to expand our scientific team and develop new cutting-edge nano-particle and nano-emulsion formulations for use in pharmaceutical preparations."
Rafal Farjo, COO, Charlesson LLC

http://www.charlessonllc.com

Stillwater Frontier Electronic Systems Corp.

Frontier Electronic Systems Corp. designs and manufactures electronic systems and equipment for government and commercial customers around the world.

Sample Applications
- Radar and video distribution
- Test equipment
- Avionics and electronics
- Space flight power and control electronics

FRONTIER ELECTRONIC SYSTEMS

Oklahoma Nanotechnology Applications Project
In concert with research from the University of Tulsa, Frontier Electronics Systems is developing high-performance lithium battery systems for commercial and military applications. Self-assembled nanostructures are being applied to construction of battery electrodes to improve energy density, safety and electrical performance.

"Our planned commercialization of nano-structured lithium battery research from University of Tulsa laboratories will fulfill a critical U.S. Department of Defense technology need."
Chuck Gray, Vice President and COO
Frontier Electronic Systems CorpQuote

http://www.fescorp.com

Norman Southwest NanoTechnologies Inc.

SouthWest NanoTechnologies Inc. is a privately held specialty chemical company that manufactures high-quality single-wall and specialty multi-wall carbon nanotubes, printable inks and carbon nanotube-coated fabrics for a range of products and applications.

Sample Applications
- Energy-efficient lighting
- Affordable photovoltaics
- Improved energy storage
- Printed electronics

SWeNT

Oklahoma Nanotechnology Applications Project
Electrode performance is the limiting factor in using lithium ion in such high-discharge applications as electric automobiles. Carbon nanotubes have been shown to increase electrical conductivity and deliverable capacity while enhancing electrode durability. SWeNT is developing highly conductive and transparent specialty multi-wall carbon nanotubes to be used in automotive and energy storage lithiumion batteries.

"ONAP support has enabled us to tailor our SMW™ (specialty multi-wall) carbon nanotubes for Li-ion battery applications, opening the door to a huge business opportunity for SWeNT."
David Arthur, CEO
SouthWest NanoTechnologies Inc.

http://www.swentnano.com

Oklahoma's Global Leaders in Nanotechnology

By using unique nanotechnology processes created with world-class research to make new or improved products, these ONAP-funded companies gain a competitive advantage that results in increased sales and market share in their respective industries.

Company	Industry(ies)	Technology/ applications
Access Optics * - Broken Arrow	precision optics, medical devices	*in vivo* diagnostic devices
Amethyst Research Inc.*- Ardmore	infrared imaging	sensors, transistors
AMETEK Oil and Gas. - Broken Arrow	energy	electronic instruments, electromechanical devices
Bijhem Scientific Inc. - Norman	nanostructure catalysts	environmental contaminant absorption and destruction
Charlesson LLC. - Oklahoma City	ophthalmic therapeutics	glaucoma, other eye diseases
Circle Operations Group - Tulsa	industrial waste conversion	regenerated fabrics, leather
EKIPS Technologies Inc. - Norman	healthcare diagnostics	chemical, biological sensors
Frontier Electronic Systems Corp. - Stillwater	aviation, aerospace	test equipment, avionics
NanoLight, Inc. - Norman	sesmiconductor nanofabrication	infrared lasers, detecters
NanoBioMagnetics Inc., parent company of XetaComp Nanotechnology LLC*, - Edmond	healthcare	broad spectrum sunscreens
OrthoCare Innovations - Oklahoma City	medical devices	prosthetics, orthotics
Rupture Pin Technology Inc. - Oklahoma City	energy, chemicals aerospace, pharmaceuticals	relief pressure valves
SouthWest NanoTechnologies Inc.* - Norman	energy, healthcare, semiconductors, composites	specialty carbon nanotubes
Wilco Machine & Fabrication Inc. - Marlow	energy	composite material storage containers

*awarded ONAP funding for two projects

The overarching mission of the Oklahoma Nanotechnology Initiative (ONI) as charged by the Oklahoma State Legislature is to provide a process and support program to bring promising discoveries in nanotechnology to commercialization by creating new or improved products. These new or improved products help grow the economy of Oklahoma by creating business and jobs.

This program has been wonderfully successful, as Oklahoma has grown the number of companies involved in nanotechnology from four to 64. While only 20 ONAP contracts have been awarded, many more companies are seeing the benefits of utilizing nanotechnology discoveries to create better products. Oklahoma is now recognized by the National Nanotechnology Coordination Offices as one of the top three states in commercializing new or improved products through applications of nanotechnology.

In FY2010, ONAP-funded projects raised $10 of additional money for every $1 of ONAP funding. Since FY2006, the funded companies have generated $16 of additional money for every $1 of ONAP funding. More than $18 million of new revenue and 100 jobs with a payroll of $7.5 million+ ($75,000 per job) have been added or retained as a result of ONAP.

The ONI works with established businesses, emerging businesses and businesses moving to Oklahoma to assist them in product development. In 2006, the legislature established the Oklahoma Nanotechnology Sharing Incentive Act, which authorized the Oklahoma Center for the Advancement of Science and Technology (OCAST) to implement the Oklahoma Nanotechnology Applications Project (ONAP). The ONAP provides a small amount of money through a competitive proposal process to assist Oklahoma companies to acquire by development, licensure, patent or partnership a nanotechnology discovery that will result in a new product on the market.

The ONI is funded by OCAST to:

- create statewide awareness of nanotechnology and its potential impact on Oklahoma
- promote Oklahoma and its resources as a valuable site for nanotechnology industry location
- serve as a clearinghouse of information to the academic, financial, industrial and business communities
- and promote ONAP.

ONI has presented more than 100 awareness programs to business groups across the state for a combined audience of over 3,000 Oklahomans. Of the 64 Oklahoma companies involved in nanotechnology today, approximately half are emerging new companies while the other half are established Oklahoma companies finding ways to utilize nanotechnology discoveries to make new or improved products. Those products already created or improved are as varied as medical devices and applications, sunscreen, hygienic clothing, oil and gas valves, prosthetic devices, composites, carbon nanotubes, electronics and cancer-detecting devices. The list goes on and on.

Oklahoma is leading the way in applications of nanotechnology!

Respectfully,

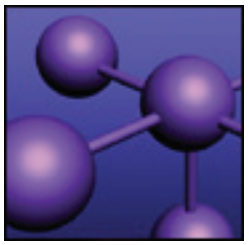
ONI Executive Director

Visit the ONI website at
http://oknano.com

Nano Products:	http://oknano.com/products.html
Companies:	http://oknano.com/oklahoma_companies.html
Researchers:	http://oknano.com/research.html
Nanotechnology for Students:	http://oknano.com/NanoforStudents.html

FAQs, videos, links and downloads throughout

In FY 2010, ONAP-funded projects raised $10 of additional money for every $1 of ONAP funding



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