

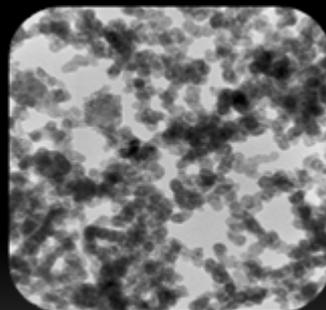
QUANTUM SPHERE®

ADVANCED MATERIALS FOR CLEAN ENERGY APPLICATIONS



ADVANCED MATERIALS FOR CLEAN ENERGY APPLICATIONS

QuantumSphere (QSI) - founded 2002



QSI makes high-performance catalyst materials and commercial products

These materials and products:

- Create greater efficiency in the generation, storage, and use of energy
- Provide breakthrough performance in clean energy and power storage products

QSI is engaged with key customers and positioned for high growth in large and emerging markets

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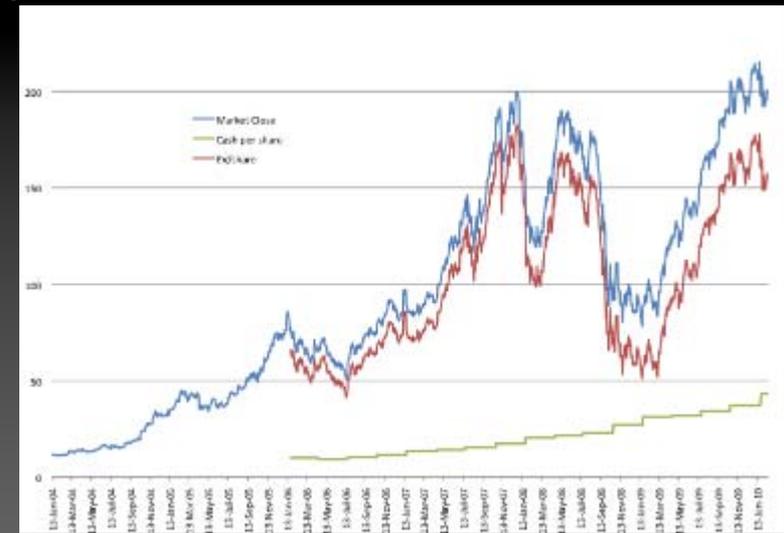
QUANTUM SPHERE





Four ingredients that help build enterprise value from an EH&S perspective...

- Strong governance program must be in place – Top Down
- Compliance culture must be integrated across organization
- Seizing opportunity for EH&S leadership in new business areas
- Understanding EH&S risks to address issues and opportunities



Source : 3E Company

QuantumSphere's EH&S Program – “under the hood”

- Worker Safety is #1
- Company Values
- Equipment
- People and Training
- Tools



QuantumSphere has a "Vision of Zero"

- Zero Incidents
- Zero Injuries
- Zero Accidents
- Zero Environmental Harm



QuantumSphere Values

LEADERSHIP

- Active leadership role in understanding, managing potential risks and hazards

- Management provides the vision, driving force and resources needed to establish a safe and healthy workplace environment

QuantumSphere Values

KNOWLEDGE

- Conduct periodic worksite analyses to identify, prevent, eliminate existing or potential hazards
- Results shared company wide via training, MSDS
- Pertinent data made available to customers, partners, industry groups, regulatory agencies, universities, and community first responders



QuantumSphere Values

PREVENTION

- Administrative and engineering controls
- Personal Protective Equipment (PPE)
- Preventive maintenance
- Emergency preparedness programs



QuantumSphere Values

SUSTAINABILITY

- Actively works to conserve resources, and minimize / eliminate adverse EH&S effects, risks
- Strive towards a "green supply chain" by the choice of suppliers, materials, and services
- Recycle, Recycle, Recycle



QuantumSphere Values

CONTINUOUS IMPROVEMENT

- Manages business and operations with the goal of continuously upgrading its understanding of the EH&S impact of nanomaterials
- Systematically adapt its mode of operations to reach and maintain our policy of "Vision of Zero"



Equipment

- QSI has a patented, closed loop manufacturing process with automation, scalability, and safety in mind
- PPE – You need to wear it!
- HEPA – Limits exposure / risks
- Controlled Environments



Closed Loop Manufacturing Process

- Designed from the ground up to be a closed loop continuous process to limit exposure
- Entire process is under vacuum, with limited interaction required for continuous operation
- Reactor Maintenance is the only time workers are potentially exposed – PPE and HEPA



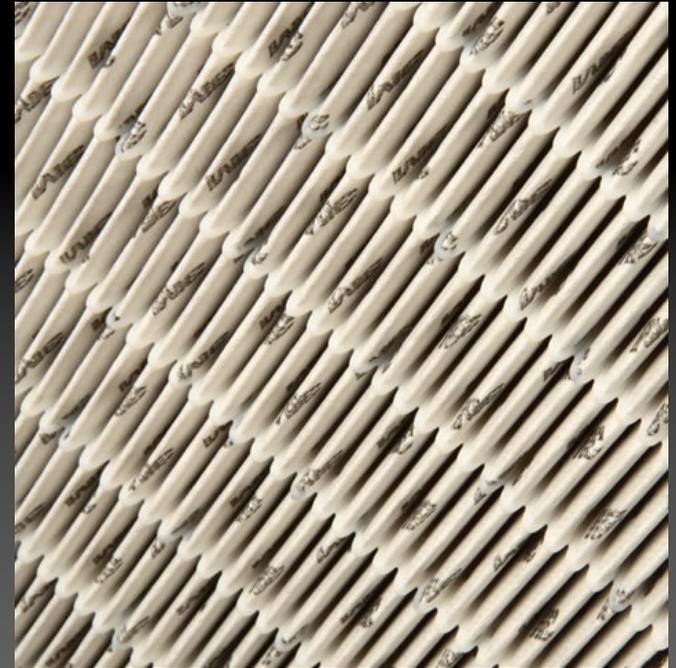
Personal Protection Equipment

- 3M Supplied Air System during reactor maintenance – Positive Flow System
- N95 Face Masks
- Nitrile Gloves
- Tyvek Jump suits
- Lab Coats



HEPA

- Flexible, mobile HEPA air filter systems for reactor maintenance
- Custom designed flange for maximum effectiveness of HEPA systems during reactor maintenance
- HEPA filters for shop vacs – particle counters show excellent performance



Controlled Environment Glove Boxes

- All post manufacturing processes are performed in inert atmosphere glove boxes
- Material classification
- Analytical testing preparation
- Passivation
- Weighing and packaging



People and Training

- On the Job Training
- Processes, Policies and Procedures were developed as we progressed
- Learn as we go – quickly adapt to issues as they developed
- Pooled information from employees previous experiences



Resources, Relationships, and Transparency

QSI Utilizes a Collaborative Approach



NIOSH Field Study Program

- Take advantage of the knowledge and expertise NIOSH has to offer
- QSI has invited NIOSH out for four onsite evaluations
- Final reports show our processes and equipment are effective
- NIOSH has a fantastic team, they are highly skilled and happy to work with and share their experiences with other companies like QSI



Cal-OSHA

- Free Onsite Safety Evaluations
- QSI has invited OSHA out for onsite evaluations
- QSI has consistently demonstrated transparency & willingness to work with government agencies
- This approach helps mitigate risks, ensures worker safety, and helps develop and adopt best practices for safety and health in our industry

California DTSC

- QSI has invited DTSC out for onsite evaluations
- QSI has worked with DTSC to develop the “Nano Call In” questionnaire
- QSI has consistently shown an openness and willingness to work with government agencies such as DTSC to ensure worker safety and help develop best practices for safety and health in our industry

Be Safe - Thank You

Questions?



www.qsinano.com
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