Making Decisions in Conditions of Uncertainty

David J. Arthur, CEO
SouthWest NanoTechnologies, Inc.
http://swentnano.com
“Making Decisions in Conditions of Uncertainty!”
- Columbus 1492
“We make and sell Specialty CNT materials, tailored for applications.”

CoMoCAT® Process

Founded in 2001

Daniel Resasco, CSO & Founder

New Factory in Q3 2008

Consistent Quality
Commercial Quantities
Competitive Pricing

8 Acres, 18K Ft², 15 people

Norman, Oklahoma

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“Norman, Oklahoma”
Positioning:

Price Dispersion Conductivity Mechanical Optical

SW $0.10 - $0.50/g
SMW $0.50 - $5/g
MW $25 - $2,500/g

10-20 nm
7 nm
1-2 nm

10-20 nm

10/6/2009
NNI Workshop_nanoEHS_Arlington, VA
Commercialization:

CNTs

Integration

Applications

Tailored CNT Products

Inks

Compounds

Buckypaper

Coatings

Composites
CNT Manufacturing

- Catalyst
- Synthesis
- Purification
- Finishing

SWeNT
Catalyst:

Catalyst Supports

Metal Salt Solutions

Catalyst Powders

10 – 100 µm

Co, Mo, etc.

100 - 1,000 µm
Synthesis:

“Black Sand” Powders

e.g., Co Mo / SiO$_2$ / CNT
100 - 1,000 µm
Purification:

“CNT” Paste

> 85% H₂O
Finishing: “CNT” Powder

TEM Image – SW CNT

5 nm

SEM image - SMW

TEM
New Facility Environmental Permitting

- Hired Environmental Compliance Consulting Firm
- Oklahoma considerations:
  - Air emissions
  - Waste water discharges
  - Storm water discharges
  - Waste management (non-hazardous and/or hazardous)
  - SPCC planning
  - EPCRA reporting
Toxicity testing

- Whole Effluent Toxicity (WET) testing:
  - Water Flea (*C. dubia*), reproduction and survival
    - Passed
  - Fathead Minnow, growth and survival
    - Passed
- Respirometry to assess activated sludge impacts:
  - Passed
New Facility Environmental Permitting (continued)

- TSCA submittals:
  - Low Release and Low Exposure exemption (LoREx) approval from EPA for conditional manufacture of SW CNT materials (expires February 9, 2010).
  - Pre-Manufacturing Notice (PMN) for SW CNT materials submitted to EPA on October 2, 2009.
  - LoREx exemption notice for SMW CNT materials to be submitted to EPA by October 15, 2009.
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- SWeNT 2009