

# Nanotechnology 101 for Investors

## Fundamental Understanding of Nanotechnology; Impact across Applications; Insights into Emerging Opportunities and Markets

### Background:

- Cedrus Investments is a worldwide leader in the nanotechnology investment arena, offering investors superior intelligence and products for successful investing in this emerging industry. The firm has been educating and advising investors on how to capitalize on the growth in nanotechnology since 2003, making Cedrus the longest-standing investment firm committed to nanotechnology.
- Cedrus has an in-house team of nanotechnology experts, a solid network of industry relationships, research analysts who publish proprietary nanotechnology equity research, and an array of investment products including a fund and two indices strictly devoted to nanotechnology.
- Previous nanotechnology industry reports developed by Cedrus' award-winning equity analysts included: **Nanotechnology Investment Thesis**, **Nanotechnology – Enabling the Future** and **Nanotech in Cleantech – The Next Generation**. These are hard-hitting reports on why investors interested in growth cannot ignore the nanotechnology industry. If you are interested in these reports, please let us know.

#### Investors cannot ignore nanotechnology:

Nanotechnology companies are growing revenue at an annualized rate of roughly 50% on average; companies developing nanotechnology will likely be disruptive to many major markets, and experts worldwide believe that nanotechnology will be responsible for the **Next Technological Revolution**.

### Executive Summary:

- The goals of this report are to provide sophisticated investors and clients with the fundamentals to help them to talk more intelligently about nanotechnology and become better informed investors in the field. The report is **written by Dr. Thomas Kenny, Cedrus' Chief Emerging Technology Advisor and a Stanford University Professor**. Dr. Kenny is an internationally renowned expert in Nanotechnology and Micro-Electro-Mechanical Systems (MEMS).
- The report is organized logically into four sections as follows:
  - I. Definition: *What is nanotechnology? What is our definition?*
  - II. Basics: *What is fundamentally unique about nanotechnology?*
  - III. Building Blocks: *What are the most common nanotechnology components?*
  - IV. Applications: *What are these nanotechnology components good for?*
- **This report will be followed by a series of in-depth and focused industry reports**, looking more closely at specific topics within this report and offering a more detailed examination of the issues and opportunities facing companies. Within the next 9 months, we plan to publish the following industry reports:
  - **Rare Earth Materials Sources and Applications for Nanotechnology;**
  - **Nanotechnology for Alternative Energy;**
  - **Nanotechnology for Water Capture and Treatment;**
  - **NanoMaterials for Energy; and**
  - **Atomic Layer Deposition for Manufacturing**
- **Nanotechnology applications are extensive**, including **energy** (converting light/solar/heat to energy and chemical energy in the form of batteries and fuel cells to electrical energy), **electronics** (memory, optoelectronics, laser and enhancing the optical properties of charged particles in display), **biology** (molecular design, artificial organs and stem cells) as well as **environment** (air/water filtration and treatment and food production). Generally, nanotechnology **enhances efficiency/performance** via increasing the surface area for chemical or other interactions and lifting volume storage capacity, and it can **reduce size, weight or cost of objects among others**. Moreover, nanotechnology could **create useful products** like fertilizers and combustible or otherwise consumable by products from the wastewater treatment process.