

Nanotubes and Energy - Hype or Hope?

19 April 2005

Cientifica - the world's leading nanotechnology information company - released today the most comprehensive global study ever undertaken of the market and technology impact of carbon nanotubes on the energy sector.

The report, *Nanotubes for the Energy Market*, has uncovered a number of notable findings, including:

-- Carbon nanofibers already compete with traditional technologies for electrodes in batteries; currently 50% of all lithium batteries incorporate carbon nanofibers which double their energy capacity. Quantitative analysis backs up Cientifica's view that this figure will rise to 85% by 2010.

-- Multiwalled nanotubes can enable a tenfold improvement in the performance of fuel cells, together with a 50% reduction of the cost of catalyst material. As prices drop over the next 5 years, Cientifica estimates they will be used in 70% of all fuel cells.

-- CNT prices will decrease by a factor 10-100 in the next 5 years. Nanofibers and MWNTs will meet price barriers by 2008-2009 for most applications in the Energy market.

-- CNT production is shifting from the US and Japan to Asia Pacific (Korea and China). By 2010 the major supplier of all types of nanotubes will be Korea.

Energy production and storage are just two of the many areas touted to be in line for dramatic impact by carbon nanotubes, with their potential to radically improve battery, fuel cell and solar cell performance.

However, as Cientifica's report points out, attention is given to the potential technological benefits of nanotubes with little or no consideration given to basic economic and commercial truths. Such an approach leads to nothing more than speculative hype.

To overcome this, the report details on a qualitative and quantitative basis the performance improvements that nanotubes will have and are already beginning to demonstrate, as well as pricing and production dynamics over the next five years.

For the first time, this information enables rational informed decisions to be made on the commercial viability and impact of nanotubes on the energy market. It separates the reality from the hype and answers important questions like:

-- Will nanotubes kick-start the fuel cell industry?

-- Are battery technologies under threat from fuel cells, or will nanotubes give them a new lease of life?

-- Will nanotubes deliver the much needed price-drops necessary to commercialise solar cells?

-- There is no shortage of CNT suppliers, so why are nanotubes so expensive, and over what timeframe will the price come down to competitive levels?

Cientifica is the world's largest independent supplier of nanotechnology information, with activities spanning from basic research through scientific networks to consultancy, business intelligence and investment appraisals. Cientifica's unrivalled focus and insight into this sector offers industry, investors and researchers unparalleled analysis of the technological and commercial opportunities for nanotubes in the energy sector.

For more information visit www.cientifica.com

APA citation: Nanotubes and Energy - Hype or Hope? (2005, April 19) retrieved 12 May 2021 from <https://phys.org/news/2005-04-nanotubes-energy-hype.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.