

Nanotech IPOs Will Ramp Up in 2005

On the surface, we heard little new at two nanotech conferences we spoke at recently: Start-ups keep forming, VCs remain cautious, investment keeps flowing, and corporations still communicate poorly with start-up partners. But underneath, the field is maturing healthily. The “nano” prefix is losing uninformed glitz, niche pure plays that shouldn’t be funded aren’t trying to be, and exit expectations have come down to earth. We think at least three start-ups focused on nanotech will IPO this year, and one will be a broad-based platform company.

Two Conferences, Same Takeaways

We recently spoke at two events focused on nanotechnology venturing: The Rice Alliance for Technology and Entrepreneurship’s Fourth Annual Nanotechnology Venture Forum in Houston, Texas on January 28, and the International Business Forum’s (IBF’s) Fourth Annual Nanotechnology Investing Forum in Palm Springs, California on February 1 and 2. Here’s what we took away.

On the Surface, Little Has Changed in Two Years

The high-level messages we heard at conferences would have been identical two years ago:

- **Nanotech start-up formation continues unabated.** Although the Rice event focused only on Houston-area academic labs and start-up companies, the activity even in this tightly circumscribed area is burgeoning. Howard Schmidt’s lab at Rice is developing carbon nanotube materials for high-capacity, low-loss power cables that could enable a more efficient national power grid; NanoRidge Materials is building carbon nanotube composites for applications from structural materials to electromagnetic interference shielding; and Nano Science Diagnostics uses 10- to 15-nm nanoparticles to enable home-based medical diagnostic kits with disposable cartridges. Our takeaway: The flow of new nanotech start-up companies will not slow in the near future.

Lux Research Inc.

Lux Research does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. This report is based on information obtained from sources believed to be reliable but no independent verification has been made, nor is its accuracy or completeness guaranteed. This report is published solely for informational purposes and is not to be construed as a solicitation or an offer to buy or sell any securities or related financial instruments.

Core Topics

- Investment Opportunities
- Partnership and Collaboration Strategies

Lead Analyst

Matthew M. Nordan
Vice President of Research
T: +1 646 723 0705
E: matthew.nordan@luxresearchinc.com

- **VCs remain cautious.** The VCs attending the IBF event were downright curmudgeonly, continually referring to nanotech as overhyped. The speakers onstage were more enthusiastic but echoed the same outlook we've heard since 2002. VCs like Alexei Andreev from Draper Fisher Jurvetson and David Aslin from 3i reaffirmed that materials start-ups' low valuation multiples make them poor prospects, that electronics start-ups receive the most interest, and that while life sciences start-ups are viewed with suspicion – no one wants a repeat of biotech's five-years-to-revenue debacles – they at least benefit from established valuation milestones inherent in the FDA approval process. We heard a consensus that a \$100 million addressable market is the floor for most VCs to consider a nanotech investment, and that most VCs want to see product revenues emerge within two years of investment in order to exit within five.
- **Investment keeps flowing – despite failures.** Based on our conversations at the IBF event, expect multiple nanotech start-ups to announce venture capital rounds exceeding \$10 million in the next two to three months. Also expect at least one high-profile nanotech start-up go under, having burned through cash at an unsustainable rate.
- **Mass secrecy still makes start-up collaboration difficult.** The start-ups that spoke at the IBF event said relationships with the customers they're supplying materials and components to still get tripped up by excessive secrecy over end applications. Nanotechnologies Inc. CEO Randy Bell said, "Just sending our nanomaterials out to companies and expecting them to get the results they desire doesn't work. If there's no scientist-to-scientist collaboration, it's a waste of our time and theirs and will fail." Nanodynamics CEO Keith Blakely pointed out that a highly publicized strategic relationship doesn't necessarily mean that the groundwork for success has been laid: "[The strategic partner] could be floundering as much as you; it's just that they're bigger, so if they land on you they'll kill you." We continue to advise corporations that nanotech start-up partnerships without complete transparency on goals and end applications are doomed.¹

Beneath the Surface, Nanotech Venturing is Slowly Maturing

Hidden within speakers' remarks and attendees' discussions, however, were signs of healthy maturity in nanotech venture investing – including:

- **Muted power for "nano" as a moniker – but not as a differentiator.** At the IBF event, Jason Lemkin from Nanogram – which was purchased by Wilson Greatbatch Technologies for \$45 million in 2004 – pointed out that so many potential customers "get nanotech" now that the prefix itself doesn't guarantee any interest. "Three to five years ago 'nano' alone could get you a meeting. Now you need a product that's valuable," he said. We consider this healthy: When companies with little more than "nano" in their names get access to senior executives, it poisons the pool for everyone else. But Nano-Tex CEO Donn Tice agreed that once a start-up does get in the door, the "nano" term can serve as effective shorthand for how its technology differs from alternative ways of solving the same problem.
- **Niche-play companies wisely resisting venture capital.** Two years ago, we felt that every university professor who wanted a beach house had put out a shingle seeking VC cash for a nanotech venture. Today some innovators with niche plays that address small markets are wisely resisting venture capital – keeping the works from getting clogged with dead-end propositions.

Consider Applied Nano Fluorescence, a two-man shop based on research by Bruce Weisman at Rice: The number of potential customers for its nanotube spectrometry device number perhaps several dozen worldwide, so it chooses to self-fund development by gradually ramping up pilot customers secured at a low cost of sale through academic networks.

- **Reasonable expectations on exits – forcing focus on capital efficiency.** The consensus we heard at the IBF event is that VCs are looking for exits on nanotech start-ups between \$200 million and \$300 million, and have disabused themselves of the notion that every nanotech play in the portfolio must have the potential for a billion-dollar IPO. This means that nanotech companies with more modest ambitions are more likely to get funded, but it also means that they will get less cash, since the expected terminal value has fallen. The message to start-ups and companies working with them is that capital efficiency is paramount: The “get big fast” mandate of Internet and telecoms start-ups, with their low barriers to entry, does not apply.

If Economic Conditions Remain Stable, the Nanotech IPO Dam Will Burst in 2005

At both events, we frequently got the question, “So who will IPO in 2005?” To set the stage for our answer, first reflect on 2004. Three companies with products significantly enabled by nanoscale science and engineering went public: polymer company Lumera, cancer diagnostic specialist Immunicon, and light-emitting-polymer display firm Cambridge Display Technologies. All three went under the radar, however, because they did not connect themselves closely with nanotechnology. As a result, they were not linked in the minds of investors and did not make it more likely for other nanotechnology start-ups to repeat their feat.

We think the game changes this year: As we see it currently, 2005 will be the year that companies clearly identified as nanotech plays host successful IPOs that reinforce opportunity for others. *If overall U.S. economic conditions hold steady in 2005 and an IPO window remains open for a six-month time period*, we believe that at least three clearly identified nanotech start-ups will have successful IPOs and that at least one will be a broad-based platform company rather than a specialist in a single application. This IPO wave will begin in Q3 2005 and extend into the first six months of 2006. Specifically, we predict that:

- **One or more of the following – Nanodynamics, Nanofilm, and Nano-Tex – will conduct straightforward IPOs by the end of Q3.** Each has significant product revenue; Nanofilm and Nano-Tex both exceeded \$20 million last year. We understand all three to be currently courting investment bankers.
- **Nanoimprint lithography toolmaker Molecular Imprints will hold a successful IPO in Q4.** We expect Molecular Imprints’ pricing to be straightforward on the basis of continued growth in product revenue.
- **Platform company Nanosys will successfully reapproach the public markets at the end of the year.** It will ask for more money than in its 2004 outing, citing increased grant revenue and structural milestones like its recent Sharp deal, but will be forced to accept a more conservative valuation due to a lack of near-term product revenue.

In addition to these, others will test the waters and a few may manage to dive in – tools and materials company Zyvex, for example, is widely thought to be considering an IPO bid. As successful start-ups open the floodgates, we think others will file IPO registrations late in the year but will not price until the first half of 2006: Strong candidates include flexible solar cell specialist Konarka, which should have a strong story by Q4 after launching an initial product with a consumer electronics company (likely a mobile-phone manufacturer), and nano-enabled memory specialists Nantero and Zettacore, both likely to price in Q1 2006 on the strength of a manufacturing agreement secured for an entry application such as an embedded SRAM alternative.

We should note, however, that if economic conditions in the U.S. go south – or if no sustained IPO window presents itself – all bets are off.

1 For more information and best practices from companies that have successfully dealt with these issues, see the October 2004 Lux Research brief “Nanomaterials: Buyer Beware.”