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<u>Company Name</u>	<u>Product Name</u>	<u>Functionalities/Properties</u>
Nano-Tex, Inc, LLC	Nano-Touch (Dockers, Savane)	feel of fabric
Feb 2004 licensed technology (Nano-Pel) to Avondale Mills, the country's largest producer of workwear and sportswear, and a leader in cotton apparel	Nano-Pel Bremen trousers, Sleepmaker and Dreamland (bedding), Bass Pro Shops, Ziener (sports equipment), DesignTex and Concept Seating (upholstery). American Medical Solutions (mattresses)	stain-resistant
	Nano-Dry Elbeco (uniforms), Croft & Barrow, Dockers, Savane, Nike, Champion, L. L. Bean	perspiration-resistant
Feb 2004 licensed technology (Nano-Care) to Avondale Mills, the country's largest producer of workwear and sportswear, and a leader in cotton apparel	Nano-Care Gap, Eddie Bauer. VF/Lee (Go Khaki), Bass Pros Shops, Old Navy. Perry Ellis, White Swan, Brooks Brothers, DKNY, Haggar, Benetton, Announced partnership with Madura Garments (India) 10/31/03	stain- and wrinkle-resistant
	Nano-Fresh	odor-resistant
Schoeller NanoSphere		stain-resistant clothing
DuPont	Levi's	Stain Defender, version of Teflon technology for clothes
DuPont Textiles & Interiors & Outlast Technologies	Phase Change Materials	responds to changes in body temperature (heating body when cold, visa versa)
JR Nanotech	Solefresh	socks containing silver nanoparticles, anti-fungal & anti-bacterial
ICI & Woolmark Company	Sensory Perception Technologies	fabrics that time-release perfumes, insect repellent or deoderant
U-Right Nano Textile Ltd & Kiu Hung Industries		plush toys that are stain-resistant, water repellent and less susceptible to bacteria
Guardian Industries, Corp.		Glass with nanocoating (residential customers) for heat efficiency
Nanooptek		photon tunneling microscope for imaging small objects (0.1 nm)
Panasonic (Matsushita Electric	Mosaic Optical	gene expression analyzer

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Industrial Corp) & SC Biosciences Corp (Japan) & Quantum Dot		carbon black for toner, boot polish, tires
Applied Nanomaterials	Nanolub	wear- and friction resistant lubricant for machines, jets, satellites
Olight (subsidiary of DuPont)		light emitting diode screens inorganic nanotubes for flat panel display screens
Nano-C, TDA & Carbon Nanotechnologies Inc., Mitsubishi		fullerenes for bowling balls, pharmaceuticals, cosmetics, lubricants (made via combustion or arc synthesis)
Pilkington, Saint-Gobain. PPG Industries		TiO ₂ for dirt-resistant glass, mirrored items, plastics, metals
Johnson & Johnson		TiO ₂ for sunscreen
L'Oreal	Plenitude Revitalift	cosmetics anti-wrinkle cream
Agilent		bioassay equipment, biological analyzers
Sequoia Pacific	SoilSET	anti-erosion material, soil binder
Wilson Sporting Goods	Double Core	tennis balls with nanotubes doubles life
Babolat (France)	VS Nanotube Power Racket	tennis rackets, lightweight, strong, and 50% increase in torsion, 20% more flex resistant, NTs from Nanoledge
Given Imaging Ltd	M2A Capsule Endoscope	pill camera, FDA approval 11/7/03 for patient trials in children (10-18), in adults 2001
Soundtec		hearing devices, FDA approval September 2001, ~1,000 implanted
Victor Castaño	Deletum 5000	graffiti-free paint
NanoSys, Inc.		liquid solution of silicon nanowires coated on glass or plastics for electronic devices microarray or biochip for DNA and protein analysis in medical applications
Frontier Carbon Corp. (Mitsubishi Chem. Corp. & Mitsubishi Corp.)	fullerenes	40 tons/yr in May 2003, 1500 tons/yr by 2007 patent expires 2009
Toray Industries	carbon nanotubes	plans to mass-produce in 2004
Teijin Ltd.	Morphotex	colorless and transparent polyester & nylon fiber that shows either blue, red, green or purple depending on way exposed to light, plans to use for paints and clothing and to produce in

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		July 2004
Terumo Corp.	artificial red blood cells	200 nm capsule with hemoglobin, in development
Kodak, DuPont, Universal Display Corp., RiT Display Corp., Samsung NEC Mobile Display Co. Ltd., Sanyo, Cambridge Display Technology, SK Display Corp., Pioneer, Sony, Toyota, Motorola, & US Army	organic light emitting diodes (OLEDs)	for display screens that are thinner, lighter, faster, brighter, cheaper and more energy efficient than LCD screens (digital cameras, cell phones, car stereos)
Eastman Kodak Company	EasyShare LS633	zoom digital camera with OLEDs, 107% larger, lower power consumption
Royal BodyCare Inc.	Nanoceuticals™	nanotechnology manufacturing process to produce products called Nanoceuticals (dietetic chocolate, cosmetics and vitamins)
US Global Nanospace Inc.	GUARDS®	small, durable, lightweight protector for Humvees (military use) for shrapnel, small arms and fire protection – 400 F
Imago Scientific Instruments, Corp.		nano-microscope - displays images 5 atoms apart
Optiva Inc.		coating technology of liquid crystal displays for flat-screen tvs or computer monitors
Zyvex, Corp.	S100 nanomanipulator	hormone encapsulation nanotubes suspended in solvent for ease in formulating dispersions attaches as a module onto a scanning electron microscope to move into position micro- and nano-scale materials
SensiCore Inc.		sensor - lab-on-a-chip to monitor impurities in water
Nanosphere		bio-barcodes for disease detection
Quantum Dot Corp.	Qdot™ & Qtracker™	nano crystals for biotechnology and drug production (6 colored-Qdots and a range of biomolecules including antibodies) Qtracker 655™ kit, a labeling reagent to introduce Qdot fluorochromes into cells and are inert, non-toxic, stable and do not transfer to adjacent cells Qdot 705 Streptavidin Conjugate, the brightest near-infrared chromophore available,

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		useful for turbid, opaque environments
Nanogram Devices Corp.		for implanted defibrillators powered by a nanotechnology powder
NanoMuscle Inc.		small motors - paper-clip sized that run on nano-sized titanium and nickel crystals, used in autos and toys
Quantumix	QX-capsule	allows SEM imaging of liquid (cells) objects
Health Plus International, Inc.	Spray for Life	Vitamins in a spray - absorbs faster and more evenly
Severn Trent Services & Bayer Chemicals	SORB33TM	process that uses Bayoxide® E33 nano-granules to remove arsenic from water
General Motors		nanomaterials for stronger running boards and fenders
Optobionics Corp.		artificial silicon retina (human tests run)
Hitachi and Charmed Technologies		wearable computers
Nanogate (sold through Holmenkol)	Cerax Nanowax	intelligent surface coating for skis – hardens as temperature drops
Franz Ziener GmbH & Co.	Oberammergau	coats that are wind-proof, water- and grime-resistant, and breathable (European)
Nanofilm	Smith brand sunglasses	anti-reflective, scratch-resistant sunglasses
BASF	NuCelle SunSense SPF 30	nano-dispersed zinc oxide (Z-COTE) protects against UVA & UVB, transparent, not absorbed by skin
IBM	Millipede	increased data storage system for cameras, video & music players, PDAs, smart phones (for flash memory), in products by 2005
Hitachi's Advanced Research Laboratory		nanostamp technology for medical applications, high aspect ratio
Nanogate Technologies (VailSoft Inc.)		ski wax
Asahi Glass Co, Ltd.	Metal Nano Dot (MND)	new non-volatile memory
Moxtec, Inc.	ProFlux polarizer	produces images with improved resolution, contrast and brightness for projectors and high definition tvs
Cyclone Aviation Products	U S. Global S.A.G. Humvee turret. Other products include G-Lam, G-Lam-C, NanoFilters, NanofilterCX, All Clear	lightweight shielded turret for humvee that allows rapid rotation, is impervious to petroleum distillates, can withstand temperatures >400 F and can withstand ballistic threats up

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	Chem/Bio Decon Foam, S.A.G. Turrets, BlastX, G-Armor and RadomeX.	to .50 caliber
Nanomix		detection, and medical and environmental monitoring
NanoTITAN, Inc.	nanoML®	the industry's first and only exclusive nanotechnology markup language, and formed the foundation for the development of nanoXplorer
	nanoXplorer™	a software suite of tools used to explore, exchange, and engineer the full range of nanodevice inspirations – from concept to commercialization
	nVisualizer™	a powerful Java built data visualization and integration application
SUSS MicroTec	NPS 200	successfully handles cold and hot embossing applications at wafer level
Nanogen, Inc.	NanoChip Molecular Biology Workstation	with ApoE alleles used to detect Alzheimer's (St. Joseph's Hospital in Phoenix)
Phillips & Sandvik Materials Technology	Cool Skin Electric, Quadro Action and Sensotec Shavers	stainless steel strip (Sandvik Nanoflex™) for use in shaver components (stationary cutter head, rotating cutting knife, hair lifter), strip has increased strength, formability and is corrosion-resistant, can be rinsed in running water
Intel	LCoS chips	liquid crystal on silicon chips for use in televisions, will make larger screens cheaper
NanoSignal Corporation	SLICES™	new technology that improves MRI scanners by creating better images, allowing shorter scan times and reduced film consumption costs
Star-Pharma (via 49.9% share in Dendritic Nanotechnologies)		Variety of dendritic research products through Sigma-Aldrich for drug delivery
Eastman Kodak Company	Ultima Picture Paper with COLORFAST	inkjet photographic paper that is highly resistant to environmental factors (humidity, ozone, light) can last for more than 100 years without protection, ceramic nanoparticles
Evolved Nanomaterial Sciences, Inc		technique for separating chiral halves (one enantiomer from the other) via nanoscaffolding
BioSante Pharmaceuticals,	Calcium phosphate-based	for safer, more effective vaccines and

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Inc.	nanotechnology (CAP) BioVant™ BioOralt™	drug delivery vaccine adjuvant and delivery system for new, improved and less toxic vaccines by various routes of administration including traditional injection and alternative routes of administration, such as nasal, oral and needle-free transcutaneous routes oral delivery of proteins such as insulin, growth hormone and other therapeutic proteins that currently must be injected
Mellenium Chemicals	Ecopaint	paint that soaks up some of the most noxious gases from vehicle, goes on sale March, composed of nanoparticles of titanium dioxide and calcium carbonate that convert NOx to acid (washed away with rain) or neutralized by calcium carbonate to carbon dioxide and water, lasts up to 5 yrs
Eikos, Inc.	Nanoshield	a coating used as shielding for EMI or electrostatic discharge for Army Humvees
Dr Ian Wilding, a special professor at the University of Nottingham heads company	Enterion capsule	capsule that contains a transmitter/receiver, a power source and a spring-based mechanism to release the drug (tested in over 1,000 people), available in couple of years
DaimlerChrysler	Mercedes-Benz	paint that is 3x as scratch-resistant as normal paint, debuts in Singapore in April 2004 in E, S, CL, SL and SLK models, C-class in June, A-class end of 2004; working on paintwork that never needs to be polished, another which can convert sunlight into electrical energy (save about half a litre of petrol per 100km, on market within few years), and rims that don't get dirty
US Genomics	Trilogy	allows tagging and analysis of small molecules (RNA, proteins, etc.)
MagiQ Technologies Inc.	Navajo systems	utilizes quantum encryption
id Quantique SA (Geneva)		quantum encryption technologies for European markets

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<p><u>NANOTUBE PRODUCTION</u></p> <p>Global single wall nanotube production capacity is currently running at 9 tons per year with the potential to increase to 20 tons by the end of 2004; multiwalled nanotubes is 32 tons per year</p>		
Cientifica	NanoInscisor™	daily alert service, a comprehensive, daily report containing all aspects of nanotechnology
Triton BioSystems and UMass Lowell	Targeted Nano-Therapeutics™	an innovative technology designed to give late-term breast and prostate cancer patients a second chance at recovery, without the debilitating side effects of today's chemo and radiation therapies, the U.S. Army's Walter Reed Army Institute of Research will fund the TNT™ research for use in Army medical facilities and hospitals worldwide, preparing for human clinical trials – application to be submitted to FDA 2005
Intel Corp.	<p>Sibley</p> <p>Prescott chip</p>	<p>a single-bit-per-cell NOR flash memory device that provides a 2X size reduction over existing 130-nm parts (90nm), offers two times the read performance and four times the write performance, sampling in 2nd quarter of 2004 and volume production in the 3rd quarter</p> <p>the first true nanochip operating at 90 nm and promising 4-gigahertz processing speed (current Pentium 4s work at 130 nm and deliver 2-gigahertz speed)</p>
Toshiba Corp.	CMOS5	start of 90 nm process named CMOS4 in fall 2004, fabrication of chips on a 65 nm process line in the first half of 2005, with CMOS6 45 nm node to follow; total projected capacity is expected to be 12,500 wafers a month in 2007

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NewMagnetics Ltd	DataInk	new digital memory format, expect to have a product on retailers' shelves by early 2005, 1.5 gigabytes of storage for \$10
Texas Instruments		digital light processors (DLPs) in 2005-2006
eMembrane Inc.		developed a technology to graft nanoscale filaments onto a polymer surface, filaments can then be customized to bind to specific targets such as ions, proteins or whole cells as they move across a surface
Novavax	Estrasorb	approved in Oct. 2003 by the FDA for prevention of hot flashes in menopausal women, micellar nanoparticle drug-delivery platform, a topical emulsion of oil, water, and lipids capable of being absorbed through the skin
American Pharmaceutical Partners	Abraxane	received fast-track status for this novel nanoparticle-based drug for use in treating metastatic breast cancer
Advanced Magnetics	Combidex	working on receiving final FDA approval for this MRI agent that will aid in diagnosing cancerous lymph nodes versus nodes that are simply inflamed or enlarged
Symphotic Tii	Nanofinder 30	launched in Japan in 2003 (March 2004 in US), capable of a lateral resolution of 200 nm, and a 400- to 600-nm-axial resolution, as well as single photon counting sensitivity, applications include single molecule fluorescence detection, 3-D Raman and photoluminescence imaging, and Raman spatial spectral analysis of various materials, including carbon nanotubes, living cells, and semiconductors.