EUROTECH DATA

NANOTECHNOLOGY REFERENCES - UPDATE 2

Prepared by Yann Power and Christine Spoiden

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This document lists references on nanotechnology, based on reports compiled by Eurotech Data for Research Directorate General of the European Commission on nanotechnology subjects since 2001, and quarterly updates since mid 2003.

It is structured in the following sections:

- **GENERAL SOURCES**: e.g.: portals, journals, market researchers
- **ORGANISATIONS IN NANOTECHNOLOGY**: industry associations, R&D promotion organisations, research groups and companies doing research, companies offering nanotechnology products and investors
- **OVERVIEWS OF NANOTECHNOLOGY**: overview documents, such as articles introducing nanotechnology
- **NANOINSTRUMENTATION AND TOOLS**: nanofabrication, nanolithography, nanomicroscopy, etc.
- **NANOBIO TECHNOLOGY**
- **NANOTECHNOLOGY FOR MEDICAL DEVICES**
- **NANOELECTRONICS AND OPTICS**
- **NANOMATERIALS**: particularly nanotubes
- **NANOMACHINES**
- **NANOTECHNOLOGY FOR ENERGY APPLICATIONS**
- **NANOTECHNOLOGY FOR ENVIRONMENTAL APPLICATIONS**
- **PRIVATE FINANCING OF NANOTECHNOLOGY**: private investment in nanotechnology
- **RESEARCH**: research by public and private organisations in nanotechnology
- **NANOTECHNOLOGY CONCERNS**: environmental, health and safety and security concerns

References in these sections are classified and ranked as follows:

- **ARTICLES**: articles published, ranked by author
- **BOOKS**: ranked by author
- **COMPANIES**: ranked by country then by name
- **CONFERENCE PAPERS AND PROCEEDINGS**: ranked by conference name, then by author
- **DIRECTORIES AND REPOSITORIES**: ranked by name
- **INDUSTRY ASSOCIATIONS**: ranked by country then by name
- **INVESTORS**: ranked by country then by name
- **JOURNALS, NEWSLETTERS, REGULAR REPORTS**: ranked by type of publication, then by name
- **MARKET RESEARCHERS**: ranked by name
- **PRESS RELEASES**: ranked by corporate source
- **REPORTS**: market reports and reports to government, ranked by type of report, then publisher, then title
- **RESEARCH**
  - **RESEARCH GROUPS**: homepages of research groups, centres, departments, etc., ranked by country then by name
  - **BY COMPANIES**: ranked by country then by name
- **WEB PAGES**: specific pages on the Internet
- **WEBSITES**: top level domains, or sections of a website offering links to subpages, ranked by name
- **WHITE PAPERS**: ranked by author
References are presented based on recommendations found in:


For example, articles are presented as follows:

AUTHORS *Title*
Serial name, year, volume, issue number, pages
Available on : http://xxx
ISSN :

Notes:
1) Some particularly relevant references appear in more than one section.
2) Several references could be classified in various sections, but they appear only in one appropriate section.
3) For online references, no consultation date is included.
4) To improve readability, separate subtitles, such as NANOFABRICATION and NANOFLIGHTOGRAPHY, are used.

In this issue, the following were added to the listing of Nanotechnology References:

1) Articles and market studies
   • 103 articles
   • 2 market studies

2) Organisations, journals and websites
   • 21 companies
   • 18 research groups
   • 1 R&D promotion agency

3) New chapters
   • NANOTECHNOLOGY FOR MEDICAL DEVICES
   • NANOTECHNOLOGY FOR ENVIRONMENTAL APPLICATIONS
GENERAL SOURCES

DIRECTORIES AND REPOSITORIES

Available on : http://www.naninvestornews.com/

Virtual Journal of Nanoscale Science & Technology
Available on : http://www.vjnano.org/

WEBSITES

Available on : http://www.cordis.lu/nanotechnology/

Available on : http://www.nanoelectronicsplanet.com/

Available on : http://www.nanoforum.org/

Available on : http://www.zyvex.com/nano/

Available on : http://whatis.techtarget.com/definition/0,,sid9_gci213444,00.html


Nanotechnology Now [Online]. 7thWave.
Available on : http://www.nanotech-now.com/

Available on : http://www.nanotechweb.org/

JOURNALS, NEWSLETTERS, REGULAR REPORTS

JOURNALS

IEEE Transactions on Nanotechnology.
Institute of Electrical and Electronic Engineers (IEEE). United States.
Text in English. Published quarterly.
ISSN: 1536-125X.
See : http://www.ieee.org/

Journal of Nanoscience and Nanotechnology.
Text in English. Published bi-monthly.
ISSN: 1533-4880.
See : http://aspbs.com/jnn/

Micro and Nanotech Industry Review.
Business Communications Company (BCC). United States.
Text in English. Published yearly.
See : http://www.buscom.com/

NanoLetters.
American Chemical Society. United States.
Text in English. Published monthly.
ISSN: 1530-6984.
See : http://pubs.acs.org/nanolett

Nanotechnology.
Institute of Physics (IOP). United Kingdom.
Text in English. Published bi-monthly.
ISSN: 0957-4484.
See : http://www.iop.org/

Scientific American.
Scientific American. United States.
Text in English. Published monthly.
ISSN: 0036-8733.
See : http://www.sciam.com/nanotech/

Small Times.
Small Times Media LLC. United States.
Text in English. Published bi-monthly.
See : http://www.smalltimes.com
NEWSLETTERS

Forbes / Wolfe Nanotech Report.
Forbes Inc. United States.
Text in English. Published monthly.
See : http://www.newsletters.forbes.com/nanotech/

High Tech Ceramics News.
Business Communications Company (BCC). United States.
Text in English. Published monthly.
See : http://www.buscom.com/letters/

Nanoparticle News.
Business Communications Company (BCC). United States.
Text in English. Published monthly.
See : http://www.buscom.com/letters/

Nanotech Alert.
Technical Insight. United States.
Text in English. Published weekly.
See : http://www.frost.com/

REGULAR REPORTS

High Tech Ceramics Industry Review.
Business Communications Company (BCC). United States.
Text in English. Published yearly.
See : http://www.buscom.com/

Microtechnology News.
Business Communications Company (BCC). United States.
Text in English. Published monthly.
See : http://www.buscom.com/

Nanoparticle Industry Review.
Business Communications Company (BCC). United States.
Text in English. Published yearly.
See : http://www.buscom.com/
MARKET RESEARCHERS

See : http://www.atip.org/NANO/

See : http://www.buscom.com/

Scientifica. Spain.
See : http://www.cientifica.com/

Freedonia Group. United States.
See : http://www.freedoniagroup.com

Front Line Strategic Consulting. United States.
See : http://www.frontlinesmc.com/

Fuji-Keizai. United States.
See : http://www.fuji-keizai.com/

See : http://www.globind.com

Institute of Nanotechnology. United Kingdom.
See : http://www.nano.org.uk/

Research and Consultancy Outsourcing Services - RNCOS. India.
See : http://www.rncos.com/

RocSearch. United Kingdom.
See : http://www.rocsearch.com/

Takeda Pacific. United States.
See : http://www.takpac.com/

See : http://www.ti.frost.com/
**ORGANISATIONS IN NANOTECHNOLOGY**

**INDUSTRY ASSOCIATIONS**

European Nanobusiness Association.
Europe (Belgium)
Website : http://www.nanoeurope.org/

Nanotec IT - Centro Italiano per le Nanotecnologie.
Italy
Website : http://www.nanotec.it/

Russian Society of Scanning Probe Microscopy and Nanotechnology.
Russia
Website : http://www.nanoworld.org/

NanoSpain.
Spain
Website : http://www.nanospain.net/

Institute of Nanotechnology (ION).
United Kingdom
Website : http://www.nano.org.uk/

Foresight Institute.
United States
Website : http://www.foresight.org

NanoBusiness Alliance.
United States
Website : http://nanobusiness.org/
R&D PROMOTION

TEKES National Technology Agency.
Finland
Website : http://www.tekes.fi/eng/

Observatoire des Micro et des Nano Technologies (OMNT).
France
Website : http://www.minatec.com/

Réseau de recherche en Micro et Nano Technologies (RMNT).
France
Website : http://www.rmnt.org/

CeNTech - Center for Nanotechnology.
Germany
Website : http://www.centech.de/

Germany
Website : http://www.nanobionet.de/

Irish Nanotechnology Association.
Ireland
Website : http://www.nanotechireland.com/

Centre of Excellence for Nanotechnology, Micro and Photonic Systems (CENAMPS).
United Kingdom
Website : http://www.cenamps.com/

INEX : Nanotechnology Exploitation.
United Kingdom
Website : http://www.inex.org.uk/

University of Birmingham - I2 Nanotech Centre.
United Kingdom
Website : http://www.i2nanotech.co.uk/

National Nanotechnology Initiative (NNI).
United States
Website : http://www.nano.gov/
RESEARCH

RESEARCH GROUPS

Australian National University - Department of Electronic Materials Engineering - Research School of Physical Sciences and Engineering.
Australia
Website : http://wwwrsphysse.anu.edu.au/eme/

University of Queensland - The Nanomaterials Center (NanoMac).
Australia
Website : http://nanomac.uq.edu.au/

Universität Für Bodenkultur - Zentrum für Ultrastrukturforschung / University of Natural Resources and Applied Life Sciences - Center For Ultrastructure Research.
Austria
Website : http://www.boku.ac.at

Katholieke Universiteit Leuven, Laboratory of Solid-State Physics and Magnetism, Interdisciplinary Nanoscience Initiative Project.
Belgium
Website : http://www.fys.kuleuven.ac.be/vsm/ini/default.htm

Interuniversity MicroElectronics Center (IMEC) - Interuniversitair Micro-Elektronica Centrum (IMEC).
Belgium
Website : http://www.imec.be/

Université catholique de Louvain - CERMIN - Research Center in Micro and Nanoscopic Materials and Electronic Devices.
Belgium
Website : http://www.cermin.ucl.ac.be/

University of Antwerp (RUCA) - Physics Department - Centre for Electron Microscopy and Materials Science (EMAT).
Belgium
Website : http://www.ruca.ua.ac.be/emat/

Centre for Nanostructured Polymer Surfaces for Medical Applications.
Denmark

Roskilde University, Department of Chemistry and Life Sciences, Center for Interdisciplinary Studies of Molecular Interactions (CISMI).
Denmark
Website : http://www.cismi.dk/

Technical University of Denmark (DTU) - Department of Physics - STM Activities in 307 and 312.
Denmark
Website : http://www.fysik.dtu.dk/stm/

Laboratoire d'Analyse et d'Architecture des Systèmes (LAAS-CNRS).
France
Website : http://www.laas.fr/

Université de Montpellier - Groupe De Dynamique Des Phases Condensées.
France
Website : http://www.gdpc.univ-montp2.fr

Université Louis Pasteur (Strasbourg) - Institut de Science et d'Ingénierie Supramoléculaires.
France
Website : http://www-isis.u-strasbg.fr/
Advanced Microelectronic Center Aachen (AMICA).
Germany
Website: http://www.amo.de/amica/

European Molecular Biology Laboratory (EMBL).
Germany
Website: http://www.embl-heidelberg.de

Forschungszentrum Karlsruhe - Institut für Nanotechnologie.
Germany
Website: http://www.fzk.de/int/

Fraunhofer Institut für Biomedizinische Technik (IBMT) - Arbeitsgruppe Nanobiotechnologie =
Fraunhofer Institute for Biomedical Engineering (IBMT) - Nanobiotechnology Group.
Germany
Website: http://www.ibmt.fhg.de/ibmt3ambitmolekularnano_e.html

Institut für Neue Materialien (INM) - Institute for New Materials (INM).
Germany
Website: http://www.inm-gmbh.de/

Institut für Physikalische Hochtechnologie, Jena / Institute for Physical High Technology (IPHT), Jena.
Germany
Website: http://www.ipht-jena.de/indexe.html

Institut für Röntgenphysik Göttingen.
Germany
Website: http://www.physik.uni-goettingen.de/Studium/Werbung/Roentgen/

Institute of Molecular Biotechnology (IMB) in Jena - Department of Single Cell and Single Molecule Techniques - Molecular Cytology Group.
Germany
Website: http://www.imb-jena.de/www_elmi/

Kompetenzzentrum Nanotechnologie (CC-NanoChem) - Competence Center Nanochemistry.
Germany
Website: http://www.cc-nanochem.de/

Germany
Website: http://www.ifw-dresden.de/

Ludwig-Maximilians-Universität (LMU) - Center For NanoScience.
Germany
Website: http://www.cens.de/

Ruhr-Universität Bochum - Facultät für Chemie - Bioorganische u. supramolekulare Chemie - Prof. Dr. Günter von Kiedrowski / Ruhr-University Bochum - Faculty of Chemistry - Bioorganic and Supramolecular Chemistry - Group of Professor Günter von Kiedrowski.
Germany
Website: http://p6-1.orch.ruhr-uni-bochum.de/kiedrowski/

Technische Universität Berlin - NanOp - Competence Centre for the Application of Nanostructures in Optoelectronics.
Germany
Website: http://www.nanop.de/

Germany
Website: http://141.30.87.40/papers/nano/
Organisations in Nanotechnology

Universität Bremen - Zentrum für Umweltforschung und Umwelttechnologie (UFT) - Abteilung der Biotechnologie und Molekulare Genetik / University of Bremen - Centre for Environmental Research and Environmental Technology - Department of Biotechnology and Molecular Genetics.
Germany
Website : http://www.uft.uni-bremen.de/biotech

University of Münster - Interface Physics Group.
Germany
Website : http://www.uni-muenster.de/Physik/PI/Fuchs

Hong Kong University of Science and Technology - Institute of Nanomaterials and Nanotechnology.
Hong Kong
Website : http://inst.phys.ust.hk/

Microelectronics Research Centre (NMRC).
Ireland
Website : http://www.nmrc.ie/

Trinity College - Physics Department.
Ireland
Website : http://www.tcd.ie/Materials_Ireland

Millennium Research for Advanced Information Technology (MIRAI) project.
Japan
Website : http://www.miraipj.jp/en/project/

Nagoya Institute of Technology - Research Center for Micro-Structure Devices.
Japan
Website : http://www.nitech.ac.jp/engl_inf/index_e.html

National Institute of Advanced Industrial Science and Technology (AIST) - Nanoelectronics Research Institute (NeRI).
Japan
Website : http://unit.aist.go.jp/nano-ele/English/index-eng.html

Delft University of Technology - Delft Institute of Microelectronics and Submicron Technology (DIMES).
Netherlands
Website : http://www.dimes.tudelft.nl

Delft University of Technology - Faculty of Applied Sciences - Department of NanoScience.
Netherlands
Website : http://www.ns.tudelft.nl

Eindhoven University of Technology - Center for NanoMaterials.
Netherlands
Website : http://www.cnm.tue.nl/

Institute of Atomic and Molecular Physics (AMOLF/FOM).
Netherlands
Website : http://www.amolf.nl/research/nanofabrication/

Leiden University - The Leiden Institute of Chemistry - MetProt group.
Netherlands
Website : http://wwwchem.leidenuniv.nl/metprot/

University of Groningen - Department of Organic and Molecular Inorganic Chemistry- Prof. B.L. Feringa.
Netherlands
Website : http://www.chem.rug.nl/feringa/

University of Twente - Faculty Science & Technology - Biophysical Engineering group.
Netherlands
Website : http://www.tn.utwente.nl/bft
University of Twente - Nanolink(Mesa+).
Netherlands
Website : http://www.mesaplus.utwente.nl/nanolink/

National Consortium for Research within Functional Materials and Nanotechnology (FUNMAT) - Strategisk samarbeid og nasjonal satsing innen funksjonelle materialer (FUNMAT).
Norway
Website : http://www.funmat.no/english/eu.html

A*Star - Agency for Science, Technology and Research.
Singapore
Website : http://www.a-star.edu.sg

Institute of Materials Research and Engineering (IMRE).
Singapore
Website : http://www.imre.org.sg/

Linköping University - Scanning Probe Microscopy.
Sweden
Website : http://www.ifm.liu.se/Appphys/spm/

Royal Institute of Technology - Department of Physics - Biomedical and X-Ray Physics.
Sweden
Website : http://www.biox.kth.se/Research/Xmic/

Stockholm University - Department of Inorganic Chemistry - Sol-Gel Group.
Sweden
Website : http://www.fos.su.se/~gw/

Ecole Polytechnique Fédérale de Lausanne, Center of Micro- Nano- Technology (CMI).
Switzerland
Website : http://cmi.epfl.ch/

Paul Scherrer Institut - Laboratory for Micro- and Nanotechnology - Laboratory for Micro- and Nanotechnology - PSI.
Switzerland
Website : http://lmm.web.psi.ch/

Swiss Federal Institute of Technology Zurich - Department of Mechanical and Process Engineering - Nanotechnology Group / Eidgenössische Technische Hochschule Zürich ETH Zurich - Departement Maschinenbau und Verfahrenstechnik - Nanotechnik.
Switzerland
Website : http://www.nanotechnology.ethz.ch

Université de Fribourg.
Switzerland
Website : http://www.unifr.ch

Industrial Technology Research Institute.
Taiwan
Website : http://www.itri.org.tw/

Cranfield University - School of Industrial & Manufacturing Science.
United Kingdom
Website : http://www.cranfield.ac.uk/sims/materials/nanotech

Dartmouth College - Dartmouth Molecular Materials Group.
United Kingdom
Website : http://www.dartmouth.edu/~dmmg/

Imperial College of Science, Technology and Medicine - Doctor Gianfranco Gilardi’s Team.
United Kingdom
Website : http://www.bio.ic.ac.uk/research/gilardi/HOME.htm
Interdisciplinary Research Collaboration in Nanotechnology.
United Kingdom
Website : http://www.nanoscience.cam.ac.uk

London Centre for Nanotechnology (LCN).
United Kingdom
Website : http://www.london-nano.ucl.ac.uk/

Nottingham Trent University - School of Engineering - Division of Mechanical and Manufacturing Engineering - The Polymer Engineering Centre.
United Kingdom
Website : http://www.domme.ntu.ac.uk/pec/

University of Bristol - Department of Physics - Polymer Group - Scanning Probe Microscopy group.
United Kingdom
Website : http://spm.phy.bris.ac.uk

University of Cambridge – Cambridge University Engineering Department - Nanoscale Science Laboratory.
United Kingdom
Website : http://www-g.eng.cam.ac.uk/nano/

University of Cranfield - Institute of BioScience and Technology (IBST) - Cranfield Biotechnology Centre.
United Kingdom
Website : http://www.cranfield.ac.uk/biotech/

University of Cranfield - Institute of BioScience and Technology (IBST) - Cranfield Centre for Supramolecular Technology (CCST).
United Kingdom
Website : http://www.cranfield.ac.uk/ibst/ccst/

University of Leeds - Centre for Self-Organising Molecular Systems.
United Kingdom
Website : http://www.chem.leeds.ac.uk/SOMS/

University of Leeds - School of Mathematics - Centre for Nano-Device Modelling.
United Kingdom
Website : http://www.amsta.leeds.ac.uk/cndm/

University Of Liverpool - The Centre for Nanoscale Science.
United Kingdom
Website : http://www.liv.ac.uk/www/nano/

University of Manchester - Manchester Centre for Mesoscience & Nanotechnology.
United Kingdom
Website : http://www.cs.man.ac.uk/nanotechnology/

University of Newcastle - Institute for Nanoscale Science & Technology (INSAT).
United Kingdom
Website : http://nanocentre.ncl.ac.uk/

University of Oxford - Bio-Nanotechnology Interdisciplinary Research Centre (IRC).
United Kingdom

University of Oxford - Department of Physics - The Rotary Molecular Motors Group.
United Kingdom
Website : http://www.physics.ox.ac.uk/biophysics/

University Of Sussex - Protein Design Group.
United Kingdom
Website : http://www.biols.susx.ac.uk/Biochem/Woolfson/html/
Arizona State University - Department of Chemistry and Biochemistry.
United States
Website : http://photoscience.la.asu.edu/bionano/index.htm

California NanoSystems Institute.
United States
Website : http://www.cnsi-uc.org/

Center for Nanoscience Innovation for Defense.
United States

Centre for Applied Microtechnology - Soft Lithography at UW/WTC.
United States
Website : http://www.engr.washington.edu/~cam/CAMsoftlithhome.html

Cornell University - Nanobiotechnology Center (NBTC).
United States
Website : http://www.nbtc.cornell.edu

Department of Energy - Office of Science - Center for Integrated Nanotechnologies (CINT).
United States
Website : http://cint.lanl.gov/

Duke University - Department of Computer Science - Professor John Reif’s Team.
United States
Website : http://www.cs.duke.edu/~reif/

Harvard University - Chemistry and Chemical Biology.
United States
Website : http://www.magic.harvard.edu/index.html

Institute For Molecular Manufacturing (IMM).
United States
Website : http://www.imm.org/

Lawrence Berkeley National Laboratory (LBNL) - Material Science Division - Center for X-ray Optics (CXRO).
United States
Website : http://www-cxro.lbl.gov/

Massachusetts Institute of Technology (MIT) - Department of Biology - Center for Biomedical Engineering - Laboratory of Molecular Self-Assembly.
United States
Website : http://web.mit.edu/lms/www/

Massachusetts Institute of Technology (MIT) - Institute for Soldier Nanotechnologies (ISN).
United States
Website : http://web.mit.edu/ism/

Massachusetts Institute of Technology (MTI).
United States
Website : http://www.mit.edu

Materials Research Society.
United States
Website : http://www.mrs.org/

National Aeronautics and Space Administration (NASA) - Ames Center for Nanotechnology.
United States
Website : http://www.ipt.arc.nasa.gov/

National Aeronautics and Space Administration (NASA) - NASA-JSC Area Nanotechnology Study Group.
United States
Website : http://amteexpo.com/nano/
Organisations in Nanotechnology

New York University - Department of Chemistry - Biomolecular Chemistry Division - Professor Nadrian C. Seeman’s Team.
United States
Website : http://www.nyu.edu/pages/chemistry/Faculty/seeman.html

North Carolina Center for Nanoscale Materials - Department of Physics and Astronomy.
United States
Website : http://www.physics.unc.edu

Northwestern University - Department of Mechanical Engineering.
United States
Website : http://www.mech.nwu.edu/ruoff

Northwestern University - Institute for Nanotechnology.
United States
Website : http://www.nanotechnology.northwestern.edu/

Pacific Northwest National Laboratory - Nano Science, Engineering And Technology (NSET).
United States
Website : http://www.pnl.gov/nano

Pennsylvania State University - Center for Molecular Nanofabrication and Devices (CMND).
United States
Website : http://www.cmnd.psu.edu/

Pennsylvania State University - Department of Physics.
United States
Website : http://www.phys.psu.edu/faculty

Purdue University - Department of Biomedical Engineering - Professor R. Bashir’s Team.
United States
Website : http://dynamo.ecn.purdue.edu/~bashir/

Rensselaer Polytechnic Institute - Rensselaer Nanotechnology Center.
United States
Website : http://www.rpi.edu/dept/research/centers/nanotech.html

Rice University - Center For Biological And Environmental Nanotechnology (CBEN).
United States
Website : http://www.ruf.rice.edu/~cben/

Rice University - Center for Nanoscale Science and Technology (CNST).
United States
Website : http://cnst.rice.edu/

Sandia National Laboratories - Nanoscale Science, Nanoscience & Nanotechnology.
United States
Website : http://nano.sandia.gov/

Standford University - Quate Group.
United States
Website : http://www.stanford.edu/group/quate_group/

University of California at Berkeley - Department of Chemistry - and Lawrence Berkeley National Laboratory - Professor Paul Alivisatos’ Team.
United States
Website : http://www.cchem.berkeley.edu/~pagrp/

University of California at Berkeley - Department of Physics.
United States
Website : http://www.physics.berkeley.edu
University of Florida - Institute for Nanoscience and Nanotechnology.
United States
Website: http://www.ufl.edu/

University of Illinois at Urbana-Champaign - Beckman Institute for Advanced Science and Technology - Molecular and Electronic Nanostructures.
United States
Website: http://www.beckman.uiuc.edu/research/menhome.html

University of Kentucky - Advanced Carbon Materials Center.
United States
Website: http://www.uky.edu

University of Michigan - Center for Biologic Technology.
United States
Website: http://nano.med.umich.edu/

University of North Carolina - Department of Physics and Astronomy.
United States
Website: http://www.physics.unc.edu

University of Notre Dame - Center of Excellence in Nano Science and Technology.
United States
Website: http://www.nd.edu/~ndnano/

University of Washington - Department of Physics - Experimental Condensed Matter Group.
United States
Website: http://www.phys.washington.edu/~seidler/cmexp.html

University of Wisconsin-Madison (UW-Madison) - Center for Nanotechnology (CNTech).
United States
Website: http://www.xraylith.wisc.edu/

Wayne State University - NanoBioScience Institute.
United States
Website: http://www.med.wayne.edu/nanobioscience/
BY COMPANIES

Fujitsu.
Japan
Website : http://www.fujitsu.com

Mitsubishi.
Japan
Website : http://www.mitsubishi.com

Mitsui & Co.
Japan
Website : http://www.mitsui.co.jp

Nikon.
Japan
Website : http://www.nikon.co.jp/

Selete - Semiconductor Leading Edge Technologies.
Japan
Website : http://www.selete.co.jp/

Ulvac.
Japan
Website : http://www.ulvac.co.jp

IBM Zurich Research Laboratory - High-resolution soft lithography.
Switzerland
Website : http://www.zurich.ibm.com/st/microcontact/highres/

IBM Zurich Research Laboratory - Nanoscale science.
Switzerland
Website : http://www.zurich.ibm.com/st/nanoscience/

Bell Labs.
United States
Website : http://www.bell-labs.com

Kuraray Research and Technical Center.
United States/Japan
Website : http://www.kuraray.co.jp/

IBM Almaden Research Center.
United States
Website : http://www.almaden.ibm.com/st/disciplines/nanoscale/

IBM.
United States
Website : http://www.ibm.com

Molecular Nanosystems.
United States
Website : http://www.monano.com

Zyvex.
United States
Website : http://www.zyvex.com/
COMPANIES

LISTINGS

Nanotechnology Now : Nanotechnology Business Programs - Sorted by Location [Online].

SPECIFIC COMPANIES

Ionen Mikrofabrikations Systeme (IMS).
Austria
Website : http://www.ims.co.at/
electron and ion beam technologies and services for the semiconductor industry and for micro and nanotechnology

MIV Therapeutics.
Canada
Website : http://www.mivtherapeutics.com/
next generation line of advanced biocompatible coatings for stents and for stent drug delivery systems with a focus on providing solutions for the treatment of cardiovascular disease and restenosis (the re-blockage of the arteries)

Rosseter Holdings.
Cyprus
Website : http://www.e-nanoscience.com
large-scale production of carbon nanotubes and related materials

Anatomics.
Denmark
Website : http://www.atonomics.dk/
nano mechanical diagnostic technologies; biosensor, biochip

Danish Micro Engineering (DME).
Denmark
Website : http://www.dme-spm.dk/
scanning probe microscopes: atomic force microscopes, scanning near-field optical microscopes and scanning tunnelling microscopes

Image Metrology.
Denmark
Website : http://www.imagemet.com/
scanning probe image processor software

MikroMasch.
Estonia
Website : http://www.spmtips.com/
supplier of Silicon-MDT scanning probe microscopy cantilevers and test structures

Eurodia.
France
Website : http://www.eurodia.com
nanofiltration

iNanov.
France
Website : http://www.inanov.fr/
carbon nanotube composites for flexible, tactile digital screen applications

Motorola.
France
Website : http://www.motorola.com/
silicon nanocrystal (quantum dot) floating gate memory device; carbon nanotubes for flat panel displays
Nanoledge.
France
Website: http://www.nanoledge.com
carbon nanotubes, carbon nanotube fibres, composite material development

Anfatec.
Germany
Website: http://www.anfatec.de/
scanning tunnelling microscopy and atomic force microscope systems and accessories

Atomic Force F&E GmbH.
Germany
Website: http://www.af-fe.de/
distributor of atomic force and other microscopy products

BASF.
Germany
Website: http://www.basf.com/
developing nanomaterials such as: colorants without dyes, non-colour-leaching plastic bags, hydrogen storage "nanocubes" for fuel cells, scratch-resistant polymers (nanocoatings), synthetic tooth enamel and superinsulators for electronic applications; R&D on new nanomaterials, as well as composites that use nanomaterials including DNA-nanotube hybrids in sensors for medical diagnostics and switches in molecular electronic devices; sales of polymer dispersions for applications including paper coatings, adhesive raw materials, and carpet binders.

Capsulution Nanoscience.
Germany
Website: http://www.capsulution.com/
layer-by-layer encapsulation method allowing the manufacture of extremely precise nano- and micron-sized capsules suitable for a suit a variety of pharmaceutical and non-pharmaceutical purposes

Carl Zeiss Group.
Germany
Website: http://www.zeiss.de/
Laser scanning microscopes

Degussa.
Germany
Website: http://www.degussa.com/
nano-scaled powders and systems including: indium tin oxide (ITO), zinc oxide, ceria, and various composites for: UV-protection & transparency, IR-absorption & transparency, conductivity & transparency, enhanced catalytic activity, high-performance polishing material, magnetically active material

Halcyonics.
Germany
Website: http://www.halcyonics.de/
vibration reduction/control systems for electron microscopy

Infineon.
Germany
Website: http://www.infineon.de/
two R&D departments - NanoProcesses and NanoDevices - that work on nanotech-oriented products and processes for semiconductors; working on integrating carbon nanotubes into its existing chip manufacturing process

JPK Instruments.
Germany
Website: http://www.jpk-instruments.de/
atomic force microscopes, scanning near-field optical microscopes and accessories

Kleindieck Nanotechnik.
Germany
Website: http://www.nanotechnik.com/
high precision micro and nano positioning devices; mini scanning tunnelling microscope
Klocke Nanotechnik.
Germany
Website : http://www.klocke-nanotechnik.de/
nanomanipulators; mini scanning tunneling microscope; positioning devices for nanotechnology instruments

Leica Microsystems.
Germany
Website : http://www.leica-microsystems.com/
high-resolution gaussian beam system for advanced nanolithography applications; high current density thermal field emission electron gun system for production lithography

Nanoscape.
Germany
Website : http://www.nanoscape.de/
nanostructured meso- and microporous materials, nanocrystalline inorganic oxides, nanostructured carbon the development of their industrial applications

Nanosensors.
Germany
Website : http://www.nanosensors.com/
scanning probes for scanning probe microscopy: non-contact / tapping mode, lateral / friction force, force modulation, electrostatic force, magnetic force

NanoTOOLS.
Germany
Website : http://www.nano-tools.com/
high density carbon scanning probes for atomic force microscopy: universal, metrology, super-long, lithography, nano-indenter, ball

Omicron Nanotechnology.
Germany
Website : http://www.omicron.de/
surface science scanning probe microscopes and systems, ultra-high vacuum scanning probe microscopes, scanning near-field optical microscopes; other instruments

Physik Instrumente (PI).
Germany
Website : http://www.physikinstrumente.com/
NanoAutomation, Piezo Technology, NanoPositioning

Surface Imaging Systems (SIS).
Germany
Website : http://www.sis-gmbh.com/
atomic force and scanning probe microscopes offering all modes whose size takes up the same space as a normal microscope optical objective; complete systems; control electronics

Triple-O Microscopy.
Germany
Website : http://www.triple-o.de/
scanning near-field optical microscopes, atomic force microscopes, probes

WITec.
Germany
Website : http://www.witec.de/
near-field scanning optical microscopes, confocal Raman microscopes, atomic force microscopes, scanning probe microscopes, pulsed force mode

Nanonics.
Israel
Website : http://www.nanonics.co.il/
near-field scanning optical microscope and scanning probe/atomic force microscope systems and accessories; nanoprobe
Canon.
Japan
Website: http://www.canon.com/
Devices from nanoscale pores and needle shaped crystals; application include semiconductor lithography, high-density magnetic recording, dye-sensitized solar cells, ultrafine particles for ink, advanced displays, nanotechnology for optical-printing materials

JEOL.
Japan
Website: http://www.jeol.com
scanning electron microscopes, Auger microprobes, electron probe microanalyzer, scanning probe microscope, transmission electron microscope and electron beam lithography systems

Matsushita Electrical Industrial.
Japan
Website: http://www.matsushita.co.jp/
develop, manufacture and market biological detection equipment based on Quantum Dot technology for applications such as disease research, drug development and diagnosis

NanoCarrier.
Japan
Website: http://www.nanocarrier.co.jp/
polymeric micelle nanoparticles used in the drug delivery system

NEC.
Japan
Website: http://www.nec.co.jp
developed electrodes made of carbon nanohorn for small, long-lasting fuel cell for mobile PCs

Nikkiso.
Japan
Website: http://www.nikkiso.co.jp
fluid control technique for continuous manufacture of nanotubes; research

Olympus.
Japan
Website: http://www.olympus.co.jp/probe/
micro cantilever for scanning probe microscopy

Shimadzu.
Japan
Website: http://www.shimadzu.com/
scanning probe and scanning electron microscopes

Showa Denko.
Japan
Website: http://www.sdk.co.jp
vapor-grown carbon nanofiber production; very-fine-particle ultraviolet shielding materials

Sigma Koki.
Japan
Website: http://www.sigma-koki.com/
Nanopositioning and angle control devices for precision measurement

Toboyo.
Japan
Website: http://www.toyobo.co.jp/
porous membranes with micropores; ion-exchange membrane, for use in polymer electrolyte fuel cells

ASML.
Netherlands
Website: http://www.asml.com/
lithography: 157 nm technology
Independent Research Engineering Group.
Russia
Website: http://www.mtu-net.ru/nanoscan/
scanning force microscope for surface investigations and hardness measurements of superhard materials and films (coatings)

NT-MDT.
Russia
Website: http://www.ntmdt.ru/
scanning probe microscopes, scanning confocal microscopes, controllers, and accessories

Silicon MDT.
Russia
Website: http://www.siliconmdt.com/
manufacturer of standard and customised silicon cantilevers and calibration gratings for scanning probe microscopy; supplier of standard products is MikroMasch

NanoMaterials Technology.
Singapore
Website: http://www.nanomt.com
nanomaterials for the pharmaceutical, electronics and opto-electronic industries

Nanotec Electronica.
Spain
Website: http://www.nanotec.es/
scanning probe microscopes

Nanofactory.
Sweden
Website: http://www.nanofactory.com/
develops and manufactures unique transmission electron microscopy holders for in situ probing of electrical and mechanical properties: a scanning tunneling microscope for in situ electrical probing; an atomic force microscope for in situ mechanical probing; a tool for in situ dynamic nanoindentation studies

Centre Suisse d'Electronique et de Microtechnique (CSEM).
Switzerland
Website: http://www.csem.ch/
nanostructuration, nanoscale optics, nanoparticles, nanocomposites, nanolayered thin films, in-process structured materials

Nanosurf.
Switzerland
Website: http://www.nanosurf.com/
dynamic force microscopes, scanning tunneling microscopes, atomic force microscopes; digital FM detector

NanoWorld.
Switzerland
Website: http://www.nanoworld.com/
scanning point probes for atomic force microscopy; arrow sensor probe is designed for easy tip positioning and high resolution imaging (contact, non-contact/tapping mode, force modulation modes)

Infinitesima.
United Kingdom
Website: http://www.infinitesima.com/
atomic force microscope cantilever control device and video rate scanning near-field optical microscope

Leo Electron Microscopy.
United Kingdom
Website: http://www.leo-em.co.uk/
scanning electron microscopes; transmission electron microscopes
QinetiQ Nanomaterials.
United Kingdom
Website: http://www.nano.qinetiq.com/
bulk nanomaterials production process for metals, oxides, and other specialist materials

Advanced Magnetics.
United States
Website: http://www.advancedmagnetics.com/
Advanced Magnetics Inc is a developer of superparamagnetic iron oxide nanoparticles used in pharmaceutical products and is dedicated to the development and commercialisation of its proprietary nanoparticle technology for use in therapeutic iron compounds, as well as novel imaging agents to aid in the diagnosis of cardiovascular disease and cancer.

Altair Nanomaterials.
United States
Website: http://www.altairnano.com/
process for making nanocrystalline materials; nano-sized TiO2/anatase, Zirconia and other particles, mainly oxides; applications in pharmaceuticals, environmental remediation, advanced batteries, fuel cells and thermal spray coatings; research & development and manufacturing

Applied Sciences.
United States
Website: http://www.apsci.com
vapor grown carbon nanofiber and composites; high performance (eg. electrical and electronic) and reinforcement (eg. tyres) applications

Asylum Research.
United States
Website: http://www.asylumresearch.com/
molecular force probe atomic force microscope; nanopositioning system

BioDelivery Sciences International.
United States
Website: http://www.biodeliverysciences.com/
The Bioral(TM) delivery technology consists of nanocochleates which are nanocrystalline delivery vehicles made from all-natural components: soy-derived phospholipid and calcium.

BioForce Nanosciences.
United States
Website: http://www.bioforceelab.com/
ultra-miniaturized nanoarray technologies for solid-phase, high-throughput biomolecular analysis applied to protein-protein interaction profiling (proteomics), disease identification (diagnostics), as well as drug and gene therapy development (therapeutics); AFM probes, premium grade V-1 muscovite mica, Tungsten microspheres, UV- TipCleaner

BioSante.
United States
Website: http://www.biosantepharma.com/
calcium phosphate nanoparticles, vehicles for delivering drugs and vaccines and enhancing the effects of vaccines (adjuvants)

Cabot.
United States
Website: http://www.cabot-corp.com/
fine particles or fine porous media; Nanogel® aerogels: hydrophobic silica particles

Carbolex.
United States
Website: http://www.carbolex.com
single-wall carbon nanotubes

Carbon Nanotechnologies.
United States
Website: http://www.cnanotech.com
single-wall carbon nanotubes
Copernicus Therapeutics.
United States
Website: http://www.cgsys.com/
DNA nanoparticle technologies to produce DNA drugs

DuPont.
United States
Website: http://www.dupont.com/
titanium dioxide nanopowders; laser-oven nanotube production of field emission flat panel displays; DNA method to sort carbon nanotubes by conductivity

DuPont AirProducts NanoMaterials.
United States
Website: http://www.nanoslurry.com/
chemical mechanical planarization slurries

EnviroSystems.
United States
Website: http://www.ecotru.com/
nanoemulsion disinfectant cleaner

Exfo.
United States
Website: http://www.exfo.com/
Photonics alignment systems, high-resolution positioning and ultra-high vacuum, high-resolution positioning

FEI Company.
United States
Website: http://www.feicompany.com/
supplier of charged particle beam systems, including FIB systems, DualBeam systems, scanning and transmission electron microscopes, and components

FirstNano.
United States
Website: http://www.firstnano.com/
process equipment suitable for the synthesis of a variety of one-dimensional nanostructures and nanomaterials; catalyzed chemical vapor deposition for development of carbon nanotube devices

Gatan.
United States
Website: http://www.gatan.com/
instrumentation and software used to enhance and extend the operation and performance of electron microscopes: spectrometers, imaging filter and spectrum imaging software; specimen holders, digital cameras; scanning electron microscopy products

Headwaters NanoKinetix.
United States
Website: http://www.htinj.com/
nanocatalyst development direct alcohol fuel cells for portable application and other for electronic devices; technology to control catalyst structure at a molecular level

Hitachi Scientific Instruments.
United States
Website: http://www.hii-hitachi.com/
transmission and scanning electron microscope systems and accessories, e-beam lithography

Hyperion Catalysis International.
United States
Website: http://www.fibrils.com
carbon nanotube development and commercialization focusing on automotive and electronic applications
InMat.
United States
Website: http://www.inmat.com/
nanocomposite barrier coating technology for sporting goods, automotive, packaging, and personal protection markets

Integrated Nano-Technologies.
United States
Website: http://www.integratednano.com/
electronic-based, field-portable DNA detection system

JMAR.
United States
Website: http://www.jmar.com/
Collimated Plasma Lithography™ System: high-power X-ray source technology for advanced semiconductor lithography

Mad City Labs.
United States
Website: http://www.madcitylabs.com/
nanopositioning products and control electronics

Materials and Electrochemical Research Corporation.
United States
Website: http://www.mercorp.com
fullerences and single-walled nanotubes

Molecular Imaging.
United States
Website: http://www.molec.com/
scanning probe microscopes and control station; atomic force microscopes; probes and tips

Nanogen.
United States
Website: http://www.nanogen.com/
molecular diagnostic tests; NanoChip® Molecular Biology Workstation for DNA-based analyses

Nanolab.
United States
Website: http://www.nano-lab.com
designs, develops and manufactures nanoscale materials and devices; aligned nanotube arrays and carbon nanotube powders

Nanomaterials Discovery Corporation.
United States
Website: http://www.nanomaterialsdiscovery.com/
combinatorial electrochemistry to search for new, enabling materials such as catalysts for applications in batteries, fuel cells, displays, and coatings

Nanophase Technologies.
United States
Website: http://www.nanophase.com/
nanomaterials through dispersions, slurries and formulations such as ceramics, coatings, catalysts; Physical Vapor Synthesis process

Nanosolar.
United States
Website: http://www.nanosolar.com/
plastic solar cells based on an active layer that optimized at the nanometer scale

Nanosphere.
United States
Website: http://www.nanosphere-inc.com/
developing molecular testing systems; nanotechnology-based nanoparticle probes, assays and instruments
Nanosys.
United States
Website: http://www.nanosysinc.com/
development of nano-enabled systems integrating functional complexity directly into each individual nanoparticle, enabling the low-cost fabrication of revolutionary high-value, high-performance applications in a broad range of industries from life and physical sciences to information technology and communications to renewable energy to defense

Nanotechnologies.
United States
Website: http://www.nanoscale.com/
custom engineered nanopowders; nanoparticles

Nano-Tex.
United States
Website: http://www.nanotex.com/
advanced materials-based company that uses proprietary technology to create, alter and improve textiles at the molecular level to develop intelligent fabrics

NanoWave.
United States
Website: http://www.nanowave.com/
scanning probe position encoder using physical or optical probe giving picometer accuracy

Nantero.
United States
Website: http://www.nantero.com/
high-density nonvolatile random access memory chip, using nanotechnology.

Novascan Technologies.
United States
Website: http://www.novascan.com/
atomic force microscopes: environmental, closed loop, optical; and accessories such as tip cleaners; research and development

Novavax.
United States
Website: http://www.novavax.com/
Micellar nanoparticles (MNPs) - non-phospholipid structures that can deliver a wide variety of ethanol based drugs and other therapeutic agents transdermally

nPoint.
United States
Website: http://www.npoint.com/
nanopositioning systems, motion controllers, and sensors; carbon nanotube scanning-probe microscope tips

Oak Ridge Micro-Energy.
United States
Website: http://www.oakridgemicro.com/
thin-film micro- and nano-scale solid state batteries; nanostructured electrodes and electrolytes for high energy density

Pacific Nanotechnology.
United States
Website: http://www.pacificnanotechnology.com/
atomic force microscopes, analysis software; probes

Quantum Dot.
United States
Website: http://www.qdots.com/
quantum dot nanocrystals; Streptavidin, Protein A and Biotin Conjugates
Quesant Instrument Corporation.
United States
Website: http://www.quesant.com/
scanning probe microscopes: atomic force microscopy (contact, intermittent contact and non-contact AFM), magnetic force microscopy, lateral force microscopy, phase mode, electric force microscopy, etc

RHK Technology.
United States
Website: http://www.rhk-tech.com/
ultra-high vacuum scanning tunnelling and atomic force microscope systems, integrated surface analysis systems, scanning probe microscopy controller electronics and accessories

TPL.
United States
Website: http://www.tplinc.com/
titanate powders with controlled size and chemistry

Ultratech.
United States
Website: http://www.ultratech.com/
application-specific stepper lithography systems; thin film heads, inkjet print heads, optical components, inertial and pressure sensors, and radio frequency devices; metrology system for die on wafer

Veeco.
United States
Website: http://www.veeco.com/
microtechnology and process equipment systems: atomic force, scanning probe, near-field scanning optical microscopes, stylus and atomic force profiler systems

Zyvex.
United States
Website: http://www.zyvex.com/
nanomanipulation systems compatible with microscopes and probe systems; microactuators and pluggable microcomponents platform technologies
INVESTORS

European Investment Fund (EIF).
European Union
Website : http://www.eif.com/

Sofinnova Partners.
France
Website : http://www.sofinnova.fr/

Activest Lux Nanotech.
Germany
Website : http://www.activest.de/

BASF Future Business.
Germany
Website : http://www.basf.de/en/futurebusiness/

BASF Venture Capital.
Germany
Website : http://www.basf.de/en/venturecapital/

Capital Stage.
Germany
Website : http://www.capitalstage.com/

Enjoyventure Management.
Germany
Website : http://www.enjoyventure.de/

Wellington Partners.
Germany
Website : http://www.wellington.de/

Nanotech Partners.
Japan
Website : http://www.nt-p.com/

NanoDimension.
Switzerland
Website : http://www.nanodimension.com/

PSE Science Park.
Switzerland
Website : http://psepc2.epfl.ch/home/index.lasso

Alba Incubator.
United Kingdom
Website : http://www.albacentre.com/

Evolution Capital.
United Kingdom
Website : http://www.evolution-group.com/

Index Ventures.
United Kingdom, Switzerland
Website : http://www.indexventures.com/
Allegro Ventures.
United States
Website : http://www.allegroventures.com/

Applied Materials Venture.
United States
Website : http://www.appliedvc.com/

Arch Venture.
United States
Website : http://www.archventure.com/

Ardesta.
United States
Website : http://www.ardesta.com/

Arlington Technology Incubator (ATI).
United States
Website : http://ati.uta.edu/

Chevron Texaco Venture Equities.
United States
Website : http://www.chevron.com/ctv/

Draper Fisher Jurvetson.
United States
Website : http://www.dfj.com/

Garage Technologies.
United States
Website : http://www.garage.com/

Harris & Harris.
United States
Website : http://www.hhgp.com/

Lux Capital.
United States
Website : http://www.luxcapital.com/

Molecular Manufacturing Enterprises (MMEI).
United States
Website : http://www.mmei.com/

Nanotech Capital.
United States
Website : http://www.nanotechcap.com/

Nanotech Venture Fund.
United States

NGEN.
United States
Website : http://www.nextgenpartners.com/

Small Business Technology Investment Fund (SBTIF).
United States
Website : http://www.nylovesbiz.com/High_Tech_Research_and_Development/investment_fund.asp

Venrock.
United States
Website : http://www.venrock.com/
Venture Technologies.
United States
Website: http://www.venture-technologies-llc.com/
OVERVIEWS OF NANOTECHNOLOGY

ARTICLES

DAGANI R. Building From The Bottom Up: Scientists are exploring various approaches to making computers based on organic molecules and other nanoscale components.
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ISSN 0360-7275

MANEY K. Nanotech Is Near: Celebrate Or Take Cover.
USA Today, 2000, October 24.
ISSN : 0161-7389

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ISSN : 0294-8052

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ISSN : 0009-2347

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Nanomaterials move up a notch.
The Economist, 2003, 6 September.

Nano Technology: No, its not all Hype: These Supertiny Gizmos will Transform our Way of Life.
Available on: http://www.businessweek.com/
ISSN : 0007-7135

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MARKET REPORTS


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FREEDONIA GROUP. Nanomaterials to 2007.
See : http://www.freediagroup.com
Overview of Nanotechnology


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NANOFABRICATION

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Small Times [Online], 2001, September 03.
Available on : http://www.smalltimes.com

Mulith's Breakthrough Optical Lithography Geared to Gaas.

New tech yields thinner probe tips.
ISSN 0918-5348

Nikon Accelerates Electron Projection Lithography (EPL) Developments to Meet Customer Demand at 70 NM.

SAL X-ray Lithography System Printing 125 nm Features at Sanders.
ISSN : 1096-598X

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