

Nanomaterials ESH Literature Database

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History of the Database

- **National Nanotechnology Initiative (NNI) contacted Vision 2020 to outline R&D priorities for nanomaterials through 2020**
- **Vision 2020 decided to determine what research had been done in the area of nanoparticle environmental safety and health**

- **Emory Ford, Vision 2020 steering committee member, secured funding through a Chemicals Plus project of the Industrial Technologies Program of DOE's Office of Energy Efficiency and Renewable Energy**
- **National Nanotechnology Initiative Chemical Industry Consultative Board (NNI-ChI-CBAN) contacted ORNL to develop an nanoparticle ESH database**

- **ORNL searched the following information bibliographic databases:**

TOXNET – Toxicology, hazardous chemicals, and environmental health

MEDLINE – Medicine, veterinary medicine, health care, preclinical sciences.

**NTIS – (National Technical Information Service)
Government-funded scientific research projects of DOD, DOE, DOT, NASA, Japan Ministry of International Trade and Industry, German Federal Ministry of Research and Technology, French National Center for Scientific Research**

PRIMARY SEARCH TERMS

Nanotechnology

Nanotube

Nanoscience

Nanomedicine

Nanocapsule

Nanosphere

Nanocrystal

Nanoparticle

Ultrafines

Fullerene

Bucky ball

Quantum Dot

Quantum effect

Quantum

Nanocomposite

SEARCH STRADEGY

SECONDARY SEARCH TERMS

Absorption

Adsorption

Aggregation

Coating

Decomposition

Distribution

Environment

Fate

Health

Particle

Metabolism

Release

Safety

Stability

FINAL SEARCH TERM

NANO

**SEARCHES WERE CONDUCTED FROM
START OF DATABASE (~1970) UNTIL
PRESENT (JANUARY 2005)**

**SEARCH FILES WERE DOWNLOADED INTO
ASCII FILES**

**ALL SEARCH FILES (CONTAINING 22,256
RECORDS) WERE REVIEWED FOR
RELEVANCE BASED BROAD AREAS OF:**

HUMAN HEALTH

ANIMAL HEALTH

ENVIRONMENTAL HEALTH AND SAFETY

2518 RECORDS SELECTED FOR INCLUSION

**RECORDS WERE LOADED IN
MICROSOFT ACCESS**

TITLE

ABSTRACT

AUTHORS

IDENT. NUMBER

JOURNAL

**ALL RECORDS SCREENED AND
DUPLICATES DELETED**

**ASSEMBLED DATABASE (1347 RECORDS)
PROVIDED TO
ICON AND CBEN**

ICON = INTERNATIONAL COUNCIL ON NANOTECHNOLOGY

**Mission to assess, communicate, and reduce
nanotechnology environmental and health risks
while maximizing societal benefits**

**Actively fosters partnerships between governments,
industry, academia, and non-governmental organi-
zations to foster environmentally responsible
industrial nanotechnology**

**CBEN = CENTER FOR BIOLOGICAL AND
ENVIRONMENTAL NANOTECHNOLOGY
(RICE UNIVERSITY)**

**A National Science Foundation Nanoscale
Science and Engineering Center dedicated
to developing sustainable nanotech-
nologies that improve human health and
the environment.**

**ICON, ADMINISTERED BY CBEN,
MAINTAINS THE ESH
NANOTECHNOLOGY DATABASE AS A
PUBLIC SERVICE**

DATABASE IS WEB-BASED

**SEARCHABLE BY AUTHOR, YEAR, and
KEYWORD(S) IN ABSTRACT OR TITLE**

FUTURE PLANS:

UPDATE DATABASE QUARTERLY

CLASSIFY RECORDS BY:

EXPOSURE PATHWAY

MATERIAL CLASS

TARGET SPECIES

EXPOSURE GROUP

PAPER TYPE

TARGET AUDIENCE

**DEVELOP FREQUENTLY ASKED QUESTION DOCUMENT TO
ACCOMPANY DATABASE**

ICON ESH NANOTECHNOLOGY DATABASE

<http://icon.rice.edu/research.cfm>