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R&D

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39th Annual
R&D
100
Awards

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The History Behind the Awards

R&D 100 Awards Mirror The March of Technology

New categories and old stalwarts reflect 39 years of research innovation.

The R&D 100 Awards, now celebrating their 39th anniversary, were established in 1963. They were originally known as the I-R 100s, in keeping with the original name of the magazine, Industrial Research. In 1963, the winners were picked by a panel of outside judges selected by the publisher and editor. No entries were required, and only US companies could win. A formal entry procedure was established in 1964, and final judging was made by the magazine's editors (with the advice of outside experts). The first non-US winners came along in 1965. Successful entries are now submitted by an international range of organizations, including universities, private corporations, and government labs. During the past few decades, the research community's growing emphasis on technology transfer has boosted the number of joint public-private submissions.

The sole criterion for making the grade is demonstrable "technological significance" compared with competing products and technologies. Issues such as smaller size, faster speed, greater efficiency, and higher environmental consciousness have continued to gain importance in successful award submissions.

In years past, the R&D 100 Awards have recognized many winning products that later became household names, including Polacolor film (1963), the flashcube (1965), the automated teller machine (1973), the halogen lamp

(1974), the fax machine (1975), the liquid crystal display (1980), the printer (1986), the Kodak Photo CD (1991), the Nicoderm antismoking patch (1992), Taxol anticancer drug (1993), lab on a chip (1996), and HDTV (1998).

The competition's first winners included nine laser products, six plastic materials, three fuel cells, two "interesting instruments," and six "promising products."

Electro-optics, high-tech materials, and energy innovation continue to be staples of the R&D 100 Awards, but the inexorable advance of technology has given rise to a host of additional categories.

This year's winners illustrate the current strength of research in key areas such as analytical instruments and processes, electronics, testing and measurement, and mechanical devices. Current honorees also occupy some niches that were barely on the radar screen in 1963, including software, environmental technology, and advanced biomedical devices and systems.

The R&D 100 Awards have a strong track record of identifying products that can save lives and preserve the environment, such as this year's enhanced radiography film and arsenic removal process. Better industrial technologies continue to be a linchpin of the competition, just as they were in 1963. But the judges also have a history of endorsing worthy entries that have an element of sheer fun, from safer fireworks to slicker camcorders.

Like global R&D itself, the R&D 100 Awards bear witness to an inspiring diversity of human inventiveness and endeavor.

The Banquet and Awards Gala

The 2001 R&D 100 Awards Banquet is a truly spectacular evening. More than 600 winners and guests, in black tie and evening dress, attend each year. The Chicago Museum of Science & Industry's foyer and rotunda are transformed into a fabulous stage and banquet area for the winners to receive the most prestigious awards in applied research. Each winner receives a handsome award plaque, is dazzled by a multimedia presentation, and gets a moment in the spotlight.

Past attendees have included state governors, the Secretary of Energy, keynote speakers like Sun Microsystems' Bill Joy, foreign diplomats, and CEOs of major international corporations.

Researchers from around the world join in the celebration as each winning team is announced by emcees. The 2001 R&D 100 Awards banquet takes place Thursday, October 4, 2001, at Chicago's Museum of Science & Industry.

R&D 100 Awards Recognize Technology Leaders

For 39 years, the R&D 100 Awards program has recognized the developers of the top 100 technologically significant products introduced into the marketplace over the past year. This year's selection finds industrial, academic, and government researchers from around the world who have moved the bar another notch higher in their continuing efforts to develop technology-based products that work to improve the human experience.



The winners of this year's R&D 100 Awards come from Canada, Israel, Germany, Japan, The Netherlands, Russia, Switzerland, and more than 30 of the United States. They come from both foreign and US industry with household names like Ford, Hitachi, Corning, Lockheed Martin, Mitsubishi, Lucent, Briggs & Stratton, Dow Chemical, Pennzoil, GE, and Toyota. They come from government technology centers like Los Alamos, Sandia, Livermore, Oak Ridge, Argonne, Fraunhofer, NASA, Army Research Lab, and NIST. And they come for academia with international names like MIT and Technion-Israel Institute of Technology.

The names of the products are less recognizable with a plethora of acronyms and lengthy explanations. But each of the technologies is unique. Unique in that they perform their tasks better than any of their competitors. Sometimes, that "better" means faster, broader, cleaner, simpler, stronger, or even less expensive. Often, this year's winning products don't even have competitors with which they can be compared. Many of the winning products accomplish tasks for which no previous product was able to satisfy.

As in previous years, there is no ranking for R&D 100 winning products. Each product was judged on its own technical merits and no criteria have ever been established for requiring winners in specific categories. To assist the reader in finding specific products, the winners have been loosely grouped into several alphabetically listed technologies from Analytical to Vacuum / Thin Film.

We invite you to read through the following pages to view the "best of the best" new technologies for 2001.

Devices Get Connected Without Computers

At minimal added cost, Newport Electronics Inc., Santa Ana, Calif., has embedded Ethernet and Web server capability in its de-vices that monitor and control industrial processes. No computer is needed--Web-enabled **NEWPORT iSeries** controllers, digital panel meters, transmitters, and signal conditioners connect directly to an Ethernet network with a standard RJ-45 connector, and can send and receive data in standard TCP/IP packets. Engineers and technicians can communicate with the devices (even via e-mail) from anywhere they have access to the Web, and need no special software other than a Web browser. The controller can even send a message to an engineer alerting him to an alarm condition or updating the status. Leveraging the technology of the Internet, the engineer can receive a message from his Newport controller on an Internet-enabled pager or cell phone.

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NEWPORT

**TO: The 100 Winners of the
2001 "R&D 100 Award"**

FROM: NEWPORT Electronics

**We're honored to be included
with each of you among
this year's all-stars of
research and development.**

**NEWPORT congratulates all
one hundred winners
(including the six who are
NOT our customers).***

**(*customers of NEWPORT
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Engineering.)**

Winner

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Advanced Ceramics Research
Advanced Engine Technology Ltd.
Advanced Fuel Research
Agilent Technologies Inc.
Aisan Industry Co.
Amcast Industry Co.
Ameritherm Inc.
Apyron Technologies Inc.
Argonne National Laboratory
Arthur D. Little
Battelle Memorial Institute
Bell Laboratories
 Lucent Technologies
Briggs & Stratton Corp. R&D Center
Brookhaven National Laboratory
Bruker AG
Bruker AXS Inc.
Caithness Operating Co. LLC
Cargo Technology Inc.
CEM Corp.
Center for Advanced Thin Film
 Technology
Center for Optics Manufacturing
 University of Rochester
Chemlcon Inc.
CombiSep Inc.
Compugen Ltd.
Corning Inc.
CREOL Center for Research and
 Education in Optics and Lasers
Delphi Automotive Systems
Department of Energy
Desert Star Systems
Digital Instruments,
 Veeco Metrology Group
Dynacs Engineering Co. Inc.
E Ink Corp.
Eastman Kodak Co.
 Health Imaging Division
ECR International
Edison Materials Technology Center
Electric Power Research Institute
Equator Technologies Inc.
Ernest Orlando Lawrence Berkeley
 National Laboratory
Fisk University
Ford Research Laboratory
FormFactory Inc.
Fraunhofer IWS
Fraunhofer USA
Gelest Inc.
GELTECH Inc.
General Electric
GT Equipment/SC Fluids
Harris International Laboratories
Hinds Instruments Inc.

Winner

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Horie Metal Co.
Hoya Corp. USA
Idaho National Engineering
 and Environmental Laborat
Inframat Corp.
Iowa State University
Iris Power Engineering
Lawrence Livermore
 National Laboratory
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QED Technologies Inc.
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