



TECHNICAL
INSIGHTS, INC.

Intelligence For Corporate Innovators Worldwide

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**UNIQUE WIRE SERVICE PROVIDES EARLY INTELLIGENCE
ON WORLD'S TECHNICAL DEVELOPMENTS**

**by Kenneth A. Kovaly, President
Technical Insights, Inc.**

Technical advances emanating from the world's laboratories can have significant impact on developments important to national security and national competitiveness. Access to this information on a timely basis, however, is the only way developers within government can take advantage of them.

The ability to track and monitor these developments is of paramount importance to exploiting the potential of materials and processes being developed daily throughout the world. Technical Insights Inc., which has been reporting on technical advances for the past 20 years, recently introduced a technology wire service that covers all the critical areas of R&D – including materials, manufacturing, and biotechnology. This service, called ALERT, provides a screened, weekly flow of concise briefings of 200-300 words. They are intended for quick scanning by R&D managers, technical managers, new product teams, technology scouts, project leaders, and others with responsibilities for spotting and exploiting new technology.

Concise, Complete Details

Every briefing in the weekly electronic service is complete with: an explanation of the new technology; the potential market impact; technology transfer status; important patents issued, and complete details on developers – names, addresses, phone and fax numbers – for follow-up.

In addition, ALERT prepares in-depth briefings (5,000 words) concerning strategic emerging technologies and the markets they will create. These reports provide a description of the technology and its significance, forecast the likely timeframes for commercialization, and project market size and market share. They also provide a guide to researchers involved in the development work underway.

ALERT is specifically designed to give early intelligence on new and significant technical developments, which won't appear in the trade or professional journals for months or years to come.

Broad Coverage of Technology

The unique electronic service covers advances in technology across a broad range of fields: industrial R&D; advanced materials and coatings; advanced manufacturing technology, and biotechnology. In addition to technical advances, ALERT presents up to 30 concise market studies a year in diverse areas.

Technical Insights's staff screens literally thousands of advances each year to identify those that are most significant and possess the greatest potential for near-term application. ALERT, therefore, allows the recipient to tap into the array of technology being developed in corporate, university, and government laboratories around the world, in the following areas:

- 1) Advances in Industrial R&D:** Significant advances, ready to be commercialized, that will lead to new products/ processes. The range of technologies is broad and is suitable for multi-product

companies seeking new areas of growth. Approximately 520 advances are profiled during the year. Also, brief profiles of emerging, high-tech companies are provided. These offer opportunities for strategic partnering/acquisition.

- 2) **Advances in Materials/Coatings:** Advances here focus on a wide array of newly emerging materials and fast-moving advances in sophisticated coatings and coating processes. These advances are useful to those seeking new products and also to those looking for solutions/improvements to manufacturing and processing problems. Along with concise market studies covering new materials, about 450 advances are profiled each year.
- 3) **Advances in Manufacturing Technology:** More than 600 advances are uncovered and profiled each year. These are specially suited to those who are continuously looking for new technologies that can be used now to improve their manufacturing operation. Special emphasis is given to sensor technology, assembly advances, and those related to improved quality through better test and measurement.
- 4) **Advances in Biotechnology:** Advances described can lead directly to new products/processes. All advances fall within the broad biotech field and include those that will lead to new medicinals or industrial products. Recipients receive some 500 advances per year, concise market studies, profiles of emerging biotech companies, comprehensive patent coverage and continuous review of strategic partnering arrangements.

Most developments described in ALERT are available under some kind of technology transfer arrangement, e.g., licensing or joint venture. Every briefing includes the name, address, phone and fax numbers of the developers.

Sample briefings from recent ALERT issues:

ADVANCES IN INDUSTRIAL R&D

Hairy carbon, new material created at SUNY/Buffalo, comprises tiny carbon filaments . . . Bell Labs takes giant data storage leap with technique that holds 300 times more data than current magnetic storage systems . . . Researchers at University of Rochester and Xerox come up with plastic sensitive to light . . . Harvard researchers achieve nano-machining with atomic force microscope . . . German measuring technique analyzes state of NiCd battery's charging . . . More efficient method of fuel cell production from Northwestern University yields cells that operate at only 750° C . . . Electric actu-

ator from Battelle, rotates like motor and thrusts like solenoid, can replace single-function actuators

ADVANCES IN MATERIALS/COATINGS

National Renewable Energy Laboratory seeking companies to commercialize plasma-enhanced chemical vapor deposition (PECVD) process for coating windows . . . Magneco/Metrel and DOE's Argonne National Laboratory sign CRADA to deposit refractory ceramics on pipe interiors . . . Japanese process to make cutting tools 2-10 times more durable than conventional CVD-coated inserts . . . BNF-Fulmer researchers develop class of metal matrix composites (MMCs) to overcome problems of low yield strength of copper . . . Potentially lower-cost gel route to carbon fibers and films . . . High-precision dual ion beam deposition method forms superconductive laminate film

ADVANCES IN MANUFACTURING TECHNOLOGY

Innovative Israeli testing instrument uses contact and ultrasonics for express analysis of microhardness, simultaneous analysis of roughness of surfaces . . . Software system from Johnson Gage provides way to handle vast amounts of paperwork, data on screw-thread inspections . . . Novel, noncontact method for welding thermoplastic components, from TWI uses infrared (IR) heating, works five times faster than conventional hotplate welding . . . G-12 grinder separates steel and fiber from rubber or plastic without high wear of granulating system . . . MIT uses wafer bonding to build miniature resonators with quality factors over 10,000 . . . Thermoplastic olefin (TPO) permits molded-in-color part to be partially painted while providing UV stabilization to unpainted sections . . . Japanese technique uses high-speed atomic beam to join ceramic to metal at room temperature

ADVANCES IN BIOTECHNOLOGY

EcoScience intensifies research into biological controls on post-harvest diseases of tree fruit through CRADA with USDA-ARS . . . ICI introduces biodegradable thermoplastic to North American market . . . Phase I clinical trials of new diabetes therapeutic begun . . . DNA probe to detect cancer-causing Her-2/neu gene on breast cells . . . Biosite Diagnostics and Ixsys sign two-year R&D agreement on antibodies . . . USDA and US Golf Association to develop natural controls on Japanese beetle grubs . . . T Cell Sciences and SmithKline Beecham file IND to begin human clinical trials of sCR1 complement inhibitor

A Typical Briefing

3D OPTICAL DIGITIZER WITH BROAD APPLICATIONS

1 & 2 Film and television producers, reconstructive surgeons, industrial designers, scientists – to name a few – will have low-cost way to create the basic computer descriptions needed for animation, modeling and visualization. Developed in the Multimedia Technology Lab at Georgia Tech, new 3D optical digitizer is a scanner that eliminates tedious and time-consuming work now done manually with pen digitizers and other

3 such tools. User can bring a very complex shape into a computer graphic in a few minutes.

4 Scanners previously available have been very expensive and could accommodate only relatively small objects. Georgia Tech device can take in the full human figure. Three video cameras obtain information about the contour of an object as it is lighted and slowly rotated. Proprietary electronic equipment converts the video input to the basic mathematical description computers need to model complex objects. Data is made available in standard (DXF) format files. Given the basic description, the artist can make electronic alterations with standard computer modeling tools. Estimate now is that a complete scanning/ animation system running on a high-end personal computer would sell for about \$15,000, compared with more than \$100,000 for presently available machines. Georgia Tech scanner has been

5 successfully demonstrated in a proof-of-concept prototype, but more work is needed to get to a commercial prototype. Inventor would like to license the technology to a company who wants to produce the device commercially.

6 **Details:** Michael J. Sinclair, Codirector, Multimedia Technology Laboratory, Georgia Institute of Technology, Atlanta, GA 30332. Phone: 404-894-4931.

Each briefing:

- (1) explains the new technology and
- (2) its potential market impact;
- (3) notes the technology's background and any patents issued to date;
- (4) describes the current stage of development and
- (5) the technology-transfer opportunities that the developer seeks; and
- (6) provides complete contact information, including names, addresses, and phone numbers.

ALERT Adds Value To Electronic Networks

The best intelligence in the world has little value if it doesn't reach the key people. And, while today's organizations may have fewer people, most should be considered key people.

In short, key employees should be kept informed (it's a form of on-the-job training), and they should especially be informed of the host of technological advances coming out of university, government, and corporate labs each day. To do this, modern communication networks using tools such as electronic mail, computer conferencing, corporate databases, and "groupware" have become essential. Most industrial firms are moving rapidly to provide these facilities to every professional worker in the organization.

Technical Insights ALERT is designed to take advantage of internal communication facilities. A site-license allows routing of vital technology intelligence instantly to everyone who can benefit from this information. Technical Insights ALERT is transmitted electronically directly into the corporate network for timely and broad dissemination.

ALERT users can implement several complementary distribution methods to meet the needs of different groups – be they R&D staff, commercial development groups, planning groups, manufacturing managers, or executive level. For example:

- ALERT can be posted on a series of electronic bulletin boards that all personnel have access to at their workstations.
- At the same time, individuals can join electronic mail routing lists to receive selected portions of the information.
- An information center can set up key-word "watch lists" to flag key areas on the Technical Insights ALERT service.
- A library can store ALERT in a database available company-wide for retrospective searches.

ALERT, in effect, acts as a special consultant keeping employees aware of significant advances in technology that can affect products, processes, national security and/or competitiveness. By using modern communications networks, vital information reaches those people who must be kept informed.

Over Twenty Years Experience

Technical Insights, Inc., was established in 1971 to provide technical intelligence to senior executives and technical managers in firms around the world.

The current pace of R&D achievements challenges innovators with a serious information gap. Important breakthroughs are recorded at such an intense rate – over such a wide range of industrial fields – that it is almost impossible for even technical experts to keep informed on a broad front. Consequently, it is imperative that managers be able to identify those developments that hold the key to profitable opportunities.

Technical Insights's aims are to:

- Spot and track technical developments poised for the fastest, most explosive growth potential;
- Identify emerging trends before they become widely apparent;
- Locate those companies likely to become technology giants, and;
- Track those technological trends whose growth rates indicate that they will produce major new industries within the near future.

Technical Insights tailors the materials it disseminates for industrial managers, senior research scientists, and executives whose responsibilities include planning for R&D, new ventures, new product development, and long-term strategy.

At all times, the company's goal is to provide instructive insights that help decisionmakers avoid potential disaster posed by technological threats – and steer their organizations on a productive and profitable course for the future.

Technical Insights calls upon an extensive staff of professionals – experts in a broad range of scientific disciplines, technology, marketing, and business, who act as project leaders in various technical fields. These project managers gather data from multiple primary sources: personal contacts, laboratory visits, technical meetings and telephone interviews.

Additionally, they sift through a host of written sources: Professional journals; scientific reports; government, private, and university research; U.S. and foreign patents; and other pertinent materials. Equally important, firms throughout the world contact Technical Insights directly about important developments in their labs as they occur.

This mass of material is carefully culled for truly significant value, confirmed and analyzed by project leaders. The net result is a series of cogent technical and management updates, in various areas, (prepared either internally or by independent experts under commission to Technical Insights) for distribution to clients in a variety of formats, from research services and periodical publications to discrete research reports.

The advent of communications networks has led to the possibility of electronic dissemination. Thus, Technical Insights now transmits data into e-mail networks and databases. This corporate-license approach allows clients to route vital technical intelligence throughout the entire organization quickly and in a highly targeted manner.

For additional information on Technical Insights ALERT, contact Kenneth A. Kovaly, president, at 201-568-4744, or PO Box 1304, Fort Lee, New Jersey 07024-9967.

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