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## NEWS

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### A DEVICE TO ELIMINATE NOISE

The Central Electronics Limited (CEL) has started commercial production of a Signal Averager which is used to extract desirable signal from the noise. It separates unwanted information from any information of importance. Where the noise is small in magnitude compared to the signal, it can be ignored but when the noise is quite high, this instrument extracts the signal, eliminating unwanted noise, and records it.

It has got tremendous applications in laser

frequency stabilization, laser development, pulsed resonance experiments, laser spectroscopy, optical saturation absorption studies, non-linear optics, pulsed Raman spectroscopy, fluorescence decay studies, acoustics, pulsed ultrasonics, vibration analysis, radioastronomy, time synchronization at very large distances, ionospheric event detection, evoked potential recording, biophysical studies, non-destructive testing, chemical kinetics and electro-relectance. (*The Business Standard*, 9 October 1983)

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### MIND OVER BODY

"The literature abounds with references to the psyche's overcoming disease, particularly cancer. Countless case histories depict the major role of cancer patients' positive attitudes in conquering their supposedly terminal conditions. Others recount stories of people whose anger and hostility towards their disease seemingly turn inward to destroy lesions. Though these cases offer only anecdotal evidence of the mind's power over the body, many clinicians accept it as wisdom, if not science. In an address to the Society of

Surgical Oncology, Theodore Miller, surgeon emeritus at New York's Memorial Hospital urged his colleagues to follow his example and not operate on patients who are convinced they won't survive the surgery. Almost invariably, he observed, these patients die, despite a technically successful operation" (Reproduced with permission from *Press Digest Current Contents*® Number 14, April 2, 1984, Copyright by the Institute for Scientific Information®, Philadelphia, PA, USA.)

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### INDIGENOUS TECHNOLOGY DEVELOPMENT STRESSED

The Planning Commission Member, Dr A. M. Khusro, has emphasized the need for evolving a suitable mechanism to identify the new locally emerging technology and provide adequate encouragement and protection for its development.

Speaking on 'Technology and economic development' at a meeting organized by the Indian Merchants' Chamber in Bombay during December 1983, he suggested that import of technology should be restricted to selected areas. He said that in view of the declining quantum of foreign aid and soft loans from agencies like IMF, World Bank and IDA, there was a

likelihood of rationing on the import technology. Therefore, the need of the hour was to identify those areas where the indigenous technology could be developed and restrict the import of technology to areas where it was most necessary.

According to him, development of indigenous technology should be rural-oriented as the urban-oriented pattern of development needed to be changed; emphasis should be on upgrading the skills of village artisans. (*The Financial Express*, 14 December 1983; *ISI Bulletin*, Vol. 36, January 1984, p. 18).

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## PLASTICS INDUSTRY DIRECTORY 1984

The 1984 Plastics Industry Directory updates and extends the 1981 edition. This edition is much more comprehensive than the first and provides a guide to custom and trade moulding, converting and fabricating services, plus source listings for chemical materials, additives, compounding services, processing machinery and ancillary equipment, mould and die making services and consultancy and design services available in the U.K.

Separate sections are provided in the directory covering the GRP field and the growing interest in dough and sheet moulding work, as well as polyurethanes. It also includes agents and distributors based in the UK representing overseas companies with relevant cross references.

The price of the Directory is £25/-; copies can be had from: Bill Mason, Maclaren Publishers, 19 Scarbrook Road, Croydon CR9 1QH. UK.

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## THE "SMOKING" WAR

It has been estimated that, in the world as a whole, cigarette smoking is now responsible for more than 1 million premature deaths each year; this is equivalent to the population of many cities. If there were even a remote possibility that the entire population of a single major city were to be wiped out over the space of a year, there would be an international outcry and immediate mobilization of resources. Yet, every year more than this number of people die needlessly early, because of smoking, but action on a scale appropriate

to the magnitude of the problem is still conspicuously lacking. Indeed, there is so little international concern that any reasonable projections about smoking in the developing countries point to the inescapable conclusion that there will be a marked increase in the number of deaths and cases of disease caused by smoking in the years to come. (*WHO Technical Report Series*, No. 695, 1983, *World Health Forum*, 1984, Vol. 5, No. 1, p. 71)

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## EVER FASTER

The earth's population rose more quickly from July 1982 to June 1983 than at any time in its history. The US Census Bureau says that the total was 4,721,887,000 on 30 June 1983, an increase of 82 million over the year. Ben Wattenberg of the American Enterprise Institute argues that while population growth is certainly geometrical, so, too, is population decline. In some developed countries population is declining. The Federal Republic of Germany, for example, has a total fertility rate of 1.5

children per woman, and if this trend continues it means that population there will decrease from 62 million to 52 million by 2000. Britain, Canada, Japan, Sweden and the USA all have fertility rates lower than replacement levels. Wattenberg says that this would be "no bad thing" if the trend were the same all over the world, but he notes that the less developed countries still have high fertility rates. (*International Dateline*, December 1983, *World Health Forum*, 1984, Vol. 5, No. 1, p. 81)

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## ASIAN CONGRESS OF PHARMACOLOGY

Asian Congress of Pharmacology is being organised at New Delhi from 15–19 January, 1985. The Congress is being sponsored by International Union of Pharmacology, Indian Pharmacological Society and Indian National Science Academy and co-sponsored by COSTED and a number of other scientific societies and Academies interested in Pharmacology and related disciplines. The central theme of the Congress will be "PHARMACOLOGY FOR HEALTH IN ASIA". In addition, many emerging

and frontier areas of pharmacology will be discussed. The participation of scientists involved in research in pharmacology and allied disciplines is welcome. The registration forms etc will be mailed in May, 1984.

The deadline for advance registration and receipt of abstracts is 30 September, 1984. For details write to: Prof. B. N. Dhawan, FNA, FAMS, Deputy Director, Pharmacology Division, Central Drug Research Institute, Lucknow 226 001.

## IS SCIENCE MARKETING?

... "Like consumer products, (scientific) theories vary in price. Low-priced theories are those that are consistent with the world view and existing research skills of the target market of scientists. Adopting such theories is relatively inexpensive, as learning time is short and belief and behaviour changes are minimal. That is, the price is within easy reach of many potential consumers. Thus, the scientist/marketer who prices his/her theory at the low end enhances the chances that the theory will penetrate the mass market. In contrast, theories that are radically different from the established world view of the research community and/or from the research procedures common in a field carry a higher price tag. Adopting such theories may require considerable learning time, extensive belief changes, and major changes in research behaviour. . . . Not all researchers can afford to pay the price required for adoption of a new theory. A prime determinant of what price an individual scientist can afford to pay is his/her place in the tenure decision

process. Younger pre-tenure scholars may not feel they can afford a high-priced theory. They may need less expensive theories that have a fairly high probability of producing rapid benefits, such as easily publishable journal articles. High-priced theories, by their very nature, tend to offer benefits with a longer time horizon. Moreover, a fairly high degree of risk is associated with most high priced theories, and many pre-tenure scientists may not wish to incur such risks. Therefore, more senior, post-tenure scholars may be more willing to invest in higher priced theories. Occasionally, beginning scholars, such as doctoral students, who have relatively little time and effort invested in traditional theories and methods, may adopt higher priced theories, especially if encouraged to do so by their post-tenure mentors." (Reproduced with permission from *Press Digest, Current Contents*® , Number 20, May 14, 1984. Copyright by the Institute for Scientific Information® , Philadelphia, PA USA)

## EPA MAPS PLAN ON DRINKING WATER

"The Environmental Protection Agency (EPA) has drawn up a blueprint for protecting the nation's vast underground water supplies. The action comes amid increasing evidence that industrial wastes, pesticides and even neighbouring gasoline stations are polluting the water that more than half of Americans drink. Recent studies have estimated that about 2% of the nation's groundwater has been contaminated, and the percentage may be much higher in heavily indus-

trialized areas. They contend that states lack the knowledge, money or political will to handle what has become one of the nation's most vexing environmental laws, none of which is designed specially to deal with ground water (Reproduced with permission from *Press Digest Current Contents*® Number 13, March 26, 1984, Copyright by the Institute for Scientific Information® Philadelphia, PA, USA.)

## MILLION KW REACTORS

The Atommash is an unique plant not only in the USSR, but also the world over. It produces everything necessary for nuclear electricity-generating units.

The total capacity of the nuclear power stations is planned to grow in the 11th Five-Year Plan period by 24–25 million kW. In nuclear engineering, priority is given to power-generating units propelled by 1000 MW reactors made now by the Atommash.

By the end of the current Five-Year Plan period, this plant will be producing eight reactors annually, each with a capacity of 1000 MW and 1000 tons in weight.

Nevertheless, all the features of line production can be found here: successive operations, the unifications of units and complete production cycle. Production techniques form a flow route.

Welding is held in special respect at the Atommash.

Each weld made should be perfect, absolutely flawless. It is inspected by magnetic-field, ultrasonic and x-ray flaw detectors, and subjected to helium, hydro and pneumatic checks.

It takes three years to make a reactor. One of them is spent on the quality checking and reliability testing of all parts and of the reactor as a whole. Multiple-stage checks naturally make for the costlier products. The works has been designed to supply integrated sets of equipment for nuclear power stations.

The best plants of eight socialist nations are closely and beneficially cooperating with each other. In all probability the Atommash, which fits in better with the 21st century, is to play in this field first fiddle. (*Soviet Features*, Vol. XXIII, No. 27, February 17, 1984)

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## A COLORLESS ALGA CALLED *PROTOTHECA* CAN POLLUTE WATER AND INFECT HUMANS AND ANIMALS

Scientists at the National Animal Disease Center (Ames, Iowa) say: *Prototheca* seems to be a colorless mutant of a green alga. It can barely survive in pure water, but it thrives on sewage, animal wastes, and tree wound drainage and is incapable of photosynthesis. It is the only alga known to cause disease in mammals.

For example, it has been shown to cause mastitis in dairy cows. In humans, *Prototheca* apparently can cause skin infections or infections secondary to other diseases (20 cases). The alga does not survive more than 15 seconds in milk heated to 143°F. (*Environ. Sci. Technol.*, Vol. 17, No. 11, 1983, p. 513A)

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## SUPER-LONG POWER LINES

The problem of transferring power to the European USSR from Siberia which accounts for a greater share of the fuel and hydroelectric resources of the USSR, remains quite complicated. Soviet engineers are building a 2,400 km power line from Ekibastuz in Northern Kazakhstan to the central regions of the European USSR, with an operating capacity of about six million kilowatts. Since the capacity of the aerial high-voltage transmission lines is already close to its technical limit, there are plans for building several parallel power lines between the Eastern and Western regions.

A promising solution is offered by the establishment

of gas-insulated lines. They consist of two pipes inserted one into the other, with special pressurised insulation gas circulating between them. Like gas-pipelines, such line can be laid in the ground or stretched above it.

The operating scheme of the new line may be described as follows: a converter of electricity into kinetic energy (accelerator), a pipeline containing the electron beam and a converter of kinetic energy into electricity (recuperator). (*Soviet Features*, Vol. XXIII, No. 27, February 17, 1984)

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