News Section

SOCIETY REPORTS

Meetings

A Meeting of the Governing Council was held on August 9, 1971 at the Indian Institute of Science, Bangalore.

Journal Subscription

Effective Vol. 21, January 1972, the Annual Subscription for the Journal is revised to Rs. 30 In and and Rs. 40 Foreign, with 15 per cent special Trade Discount.

Back Numbers of Journal

The Society will be glad to supply back numbers eversince the Journal was started in 1952, except a few years for which the stock is exhausted. Enquiries may kindly be addressed to the Editor.

GENERAL NOTES

Synthetic Detergents

Chemical Age of India, May 1971 is a mid-year special on the above. There are 14 interesting articles covering the technology, processes, sources, applications and future trends.

Electroplated Plastics

Electroplated plastic articles having an electroplated coating on one side only, have proved to have a greater crack resistance than those plated all around, provided that the electroplated side is that which is actually exposed to use, i.e., general wear and tear. This experience has been verified by several tests, and described in Galvanotechnik, March 1971.

New Dry Cell Battery

A new dry cell battery with a solid top-seal will be introduced soon in the Indian market to meet the rising demand - 650 million last year and expected to be 1,050 million by 1974. The know-how and research facilities of the Toshiba Group in Japan will be available for this venture.- Bull. Institution of Engineers (India), Vol, 20, No. 9, 24 1971.

Physics Exhibition 1971

The Exhibition was held in London during April 1971. Electronics teaching was the main theme for the technical programme, which included films. A Handbook has been issued on the occasion.

Welding

A firm weld along the entire length of the two surfaces is produced by the vacuum diffusion method in Moscow a few years ago. Since surface oxidation does not take place in a vaccum the atoms of the metals being joined pass freely from one to another. Methods have been evolved for joining more than 400 pairs of materials that do not lend themselves easily, or at all, to conventional welding.- Soviet Union, No. 6 (255), 34, 1971.

Experimental MHD Generator

A new development in magneto-hydrodynamic (MHD) power generation, which may possibly be one of the cheapest methods of producing electricity in future, is reported by the Krzhizhanovsky Power Institute of Moscow. Research here has led to the designing of the world's first MHD generator operating on liquid metal. Its capacity is one kilowatt. The MHD generators developed up until now have used streams of heated plasma passing between the poles of a magnet.

In the new installation, a mixture of liquid and vapourous potassium heated to 900°C is sent into a nozzle, accelerated to a velocity of 502 meters per second and put through a strong electromagnetic field, where the electricity is generated. Since the electrical conductivity of liquid metals is hundreds of thousands of times greater than that of plasma, the installation makes it possible to generate alternating current directly.- Soviet Union, No. 6 (255), 34, 1971.

Electric Car

The electrically run Opel GT--1900 presented at the Hockenheim car track in Germany recently set 5 world records inclunding a speed of 188.6 km per hour with a flying start. Fitted with two d.c. motors and 280 battery cells, it impressed the experts with its amazing performance. German News, Vol. 13, No. 12, 14, 1971.

Golden Bectria

Gold can now be extracted from poor ores with the help of bacteria. It has been demonstrated in the U. S. S. R. that some species of micro-organisms are capable of dissolving gold, and have proposed a new extraction method. After a deposit with a low gold content has been turned into a crumbly mass by powerful jets of water or by blasting, water containing gold-consuming bacteria is pumped into it. Each litre of water that is subsequently pumped out contains 10 mgms of gold. Scientists believe it is possible to evolve new strains of bacteria that will consume antimony, aresnic, tungsten and various rare elements. This will considerably expand the possibilities of mine microbiology Soviet Union, No. 7, (256), 33 1971.

Atomic Power

One of the specific features of the current scientific-technological revolution is the application of the nuclear technology to national economy on a constantly increasing scale and the fast rate of development of the nuclear power industry. The share of atomic power plants in the total energy produced in the world is growing incessantly. Whereas in 1970, the capacity of unclear power plants was estimated at 24,000,000 kw, that is, slightly more than 2 per cent of the total power available in the world, by 1980 it is expected to reach 330,000,000 kw approsximately about 15 per cent of the total power to be produced in the world by that time.

Nowadays, the development of atomic power industry is promoted by cooperation of states on the basis of bilateral or regional agreements, and also by active participation in the work of the International Atomic Energy Agency.

Thin Films Conference

Venice is the venue for the International Conference on Thin Films sponsored by the Italian Physical Society and the Italian Electrical and Electronic Association and promoted by the International Thin Film Committee during May 1972. The major topic will cover the application of the films.

Conference on Ionized Gases

The Tenth International Conference on Phenomena in Ionized Gases has been organized by the University of Oxford during September 1971. The sessions include collision processes in gases, surface phenomena. electrical discharges, plasma physics and experimental techniques.

Automatic Control

The Fifth World Congress of the International Federation of Automatic Control will be held in Paris during June 1972. The topics cover control theory systems, control components, control education and control technology.

Journal of Applied Electrochemistry

Chapman & Hall, London have started the above quarterly, effective 1971. The cover age is wide: electrochemical engineering, power sources, electrosynthesis, electrometallurgy electrobiology, electrochemistry of the solid and molten states and other related topics.

More about Cobalt

Since its demise as a bright plating process, cobalt-nickel alloy deposition has acquired a new lease of life. Arising out of the nickel shortage, International nickel has introduced cobalt into the Ni-speed process for producing law-stress electroforms from sulphamate electrolytes. Applications include the production of electroformed moulds and dies for zinc alloy die-castings. Metal Finishing J., Vol., No. 17, 195, 75, 1971.

Czech Coatings Conference

Production of Decorative protective Coatings is the theme for the Fourteenth International Galvanic Conference to be held in Bratislava Kocelova during October 1971.

Extraction Metallurgy

Metallurgical Review 151, Part 1, in Metals & Materials,

March 1971 covers hydrometallurgy and electrometallurgy; there are 126 references.

Aluminium Oxide Coating

A new technique for applying decorative coatings onto a variety of metal substrates such as zinc, aluminium and copper has been developed by the Fulmer Research Institute, England. The coatings, which consist of aluminium oxide, are electrodeposited and may be dyed either during or after deposition to produce a range of attractive colour finishes. It is estimated that the cost of the developed process will be about 1 p/sq. ft. for continuous coating of, for example, galvanized strip, or approximately 4 p/sq. ft. for a batch process involving jigging of components.- Anti corrosion Methods and Materials, Vol. 18, No. 4, 18, 1971.

CHISA' 72

The 4th International Congress of Chemical Engineering, Chemical Equipment, Design and Automation will be held during September 1972 at Marianske Lazne, Czechoslovakia. It is organized by the Czechoslovak Chemical Society and the Czechoslovak Society for Industrial Chemistry as the 115th event of the European Federation of Chemical Engineering.

Sea Horse Institute Meeting

The European Meeting of the Sea Horse Institute was held during September 1971 at Huis ter Duin, Noordwijk Aan Zee. Five sessions covered : stainless steel and related alloys, heat exchanger systems, metals and alloys, special topics, corrosion phenomena and testing techniques.

Electroless Nickel on Aluminium

A new method for electroless nickel plating on aluminium alloys has been developed in the U.S.S.R. After a normal etch in 10 per cent caustic soda solution at 70°C for 10 seconds, the aluminium alloy component is immersed in a concentrated phosphoric acid etch - containing nickel chloride, for 2 minutes at 70°C. This will deposit sufficient nickel on the surface to act as a catalyst for the subsequent electroless nickel plating from a solution containing nickel acetate, sodium hypophosphite and glycerin. This is operated at pH 5 and 95-98°C giving a deposition rate of up to 25μ per hour.- Electroplating and Metal Finishing, Vol. 24, No.4, 29, 1971

IMF Conference

The Annual Technical Conference of the Institute of Metal Finishing, London was held at Brighton during May 1971. The technical programme was divided into several groups : nickel and chromium, theory and testing, corrosion and protection, organic finishing, plating non-metallics, study session, printed circuitry, phosphating and anodizing, electroforming and precious metal plating.

Isotopic Power Sources

Physics Bulletin, April 1971 contains an article with the above title. It covers isotope fuel, thermal insulation, thermoelectric materials, thermopiles, generators, power to weight ratio and generator cost and applications.

Chemical Education Journal

The National Council for Science Education, New Delhi is publishing the Indian Journal of Chemical Education, now running Volume Two. The purpose is to cater to the needs of a wide circle of teachers of Chemistry at all levels in different institutions in India.

Heat Treating

There are 5 articles of interest on Progress in Heat Treating in Metals Engineering Quarterly, May 1971 : (1) Atmospheric Control, (2) Continuous vs batch, (3) Synthetic quenchants, (4) Fasteners and (5) Vacuum heat treating.

Aluminium-Manganese Codeposit

Battelle sees in the new aluminium alloy plating system a major break-through in coating technology, claiming that it could be the key to a very attractive alternative to cadmium plating from the viewpoint of performance and absence of pollution. The plating, which consists of manganese codeposited with aluminium, has been found to provide uniform coating on a variety of parts including those with complex shapes. The coating is conducted in fused salt electrolyte at 350°C. The manganese content varies from 10 to 30 per cent, the deposited layer being fine-grained and bright at 20 to 30 per cent.- Metals and Materials, Vol. 5, No. 4, 116, 1971.

Organic Chemical Industry

The Northern Regional Centre, Indian Institute of Chemical Engineers has scheduled a Seminar on the above topic at New Delhi

"**The Polluted Land**" is the title of an article in Imprint, July 1971 describing how Japan fights poisoned air and water. The cadmium concentration in the kidneys of a worker who died after 2 years in a zinc-smelting factory was 22,400 ppm-probably the highest so far known. Japan has the world's third largest Gross National Product, and suffers one of the world's worst pollution problems. Industrial hazards have existed in the nation since 1868, but it was only a few years ago that there was an awareness of the perils of economic growth. Millions of cars suffocate cities. Smoke-stacks belch black smoke containing particulates and noxious, chemicals, such as sulphur oxides and nitrogen oxides, round the clock. Waters around the country's four major islands are so polluted, that fishermen claim an annual loss of at least Rs. 300 crores in fish killed or made unfit for human consumption. During 1971 the government plans to spend Rs. 187.5 crores to combat pollution, but industries are reluctant to follow suit. The following quotation is apt: "Japan's industrial advancement has helped elevate her international prestige. But at home, it's making a lot of people unhappy".

A Symposium on **industrial pollution** combined with an Exhibition was held in Hollingbourne, Kent, England during April 1971 under the sponsorship of the North West Kent Section of the Institute of Measurement and Control. It was concerned with all problems with particular influence on the steel, cement, pulp and paper and petrochemical industies as local authority sewage problems and provided a forum for discussions of problems of measurement.

Milieu 71, the first in a series of international exhibitions devoted to **environmental control** techniques, will take place in Utrecht, Netherlands during October 1971. **Lead** in the environment form the topic of an article in Chemistry in Britain, April 1971 : introduction, lead concentrations in air, absorption of the lead, blood and urine levels, technological considerations. "Chemical Control of the **Human Eenvironment**', is a publication by Butterworths, London, 1970, 141 pages. The British Nuclear energy Society organized a two-day International Conference on "**Effect** of **environment** on material properties in nuclear system' in London during July 1971. It surveyed the most recent work on corrosion and its effects on materials in nuclear reactors. John Wiley and Sons have published a book on **Marine Ecology**, Vol. 1 - Environmental Factors by 0. Kinne (Ed.), 1970.

American industry is making a valuable contribution to **cleaning up the environment** by developing metal from discarded tin cans. This is particularly efficient for aluminium cans, because they can be readily melted down and have a high salvage value, about $ 200 a ton. Tests have shown that tin-free steel cans can be recycled successfully to make primary steel.- The American Reporter, Vol. 21, No. 11, 4, 1971.

A Symposium on **Corrosion through Pollution** was held during July 1971 by the N. S. M. Branch of the Australasian Corrosion Association. A Bulletin on Industrial and Municipal Waters Treatment and Pollution Control has been issued by Chlori-Meters and Controls, Carnegie, Victoria, Australia. A major research project on a **pollution-free hydrometallurgical process** for recovery of copper from sulphide concentrates will be undertaken by Conninco and Sheritt Gordon Mines. Natural History Press, U. S. A. has published a book "**Environment:** A Challenge for **Modern Society**", by L. K. Caldwell, 1970, 292 pages. Treatise on Analytical Chemistry" Part 3, Vol. 1: Industrial Toxicology and **Environmental Pollution** and Its Control", by I.M. Kolthoff, P. J. Elving and F.H. Stross (Ed.), 1971,640 pages has been published by Wiley-Interscience.

A Seminar on **Environmental Pollution** has been organized by the Baroda Sub-Centre, Institution of Engineers, India during December 1971. Pollution of the environment due to discharge of gaseous, liquid and solid waster from industries, municipalities and other sources, and pollution of the environment due to noise will be discussed.

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