News Section

GENERAL NOTES

The Institution of Engineering Science

THE Institution of Engineering Science has been incorporated in Australia in 1960. Its objects are to meet the requirements of practical engineers and scientists and to provide a bridge between these two categories of professional men who have many kindred interests. It caters for the requirements of aeronautical, automotive, chemical, civil, electrical, mechanical, radio and telecommunication engineers.

International Symposium on Aluminium

The First International Symposium on the Extractive Metallurgy of Aluminium was held in New York during February 1962 in conjunction with the annual meeting of the A.I.M.E. Sixty-five papers were discussed in 4 groups dealing with alumina production, carbon technology, reduction processes and, new processes and materials of construction. The papers are scheduled for publication in the Journal of Metals, and the complete proceedings in book form by Interscience Publishers.

Caustic Soda Industry in India

The proceedings of the Seminar on Caustic Soda Industry in India held at Bombay in 1960 (This Bulletin, Vol. 10, 59, 1961) have been published as a special volume of Chemical Age of India (Vol. 12, No. 6, 457-600, 1961). It covers 28 papers on various aspects of the industry—raw materials, cell design and operation, caustic fusion, power, statistical quality control, instrumentation, materials of construction, corrosion, research and development, types of cells and report by the development council for alkalies and allied industries.

Sintered Type Alkaline Storage Batteries

Six papers on sintered type alkaline storage batteries have been published in the Journal of the Electrochemical Society of Japan, Vol 29, E 79, 88, 89, 92, 193, 195, 1961. They deal with negative plates prepared by vacuum impregnation and fusing salt impregnation; behaviour of the active materials of the cathode-discharge characteristics and results of x-ray diffraction of the cathode plate, electron microscopic observations and the results of thermoanalysis; discharge characteristics; influence of preparing conditions upon the durability of the sintered type cadmium negative plate; behaviour of the sintered type nickel positive plates.

Gordon Research Conferences

The 1962 Gordon Research Conferences were held from June 11 to August 31 at New London, N.H., U.S.A. Physical metallurgy, corrosion, and chemistry and physics of solids were the subjects for the discussion. Titles of over 50 papers presented at the Conference can be found in the Journal of the Electrochemical Society, May 1962.

NACE Corrosion Reports

The May 1962 issue of Materials Protection has published five reports on corrosion activities during 1961 in the U.K., Sweden, Italy, India and New Zealand. They indicate the growing interest and work throughout the world in corrosion prevention. The addresses of the overseas correspondents of the National Association of Corrosion Engineers, U.S.A. for the various countries have been given. The June 1962 number covers similar reports from Germany, Holland and Switzerland.

Australian Conference on Electrochemistry

The First Australian Conference on Electrochemistry will be held jointly by the Royal Australian Chemical Institute, The University of Tasmania and the University of New South Wales during February 1963 in Sydney and Hobart. The following topics are among those to be discussed: thermodynamics of electrolytes, electroanalytical methods, electrode processes, fused salts and non-aqueous electrochemistry.

Ferro-Silicon Plant in Mysore

The Second ferro-silicon plant in India, which has been set up at the Mysore Iron and Steel Works, Bhadravati, would raise the production

capacity of ferro-silicon from 5,000 to 20,000 tons a year. Bhadravati is the only producer of this material in India at present. The new plant costing Rs. 1.3 crores has been commissioned with Norwegian collaboration. The scheme for increasing steel production from 30,000 to 130,000 tons a year at this factory is expected to be completed soon.

Fourth Seminar on Electrochemistry

The Central Electrochemical Research Institute is holding the fourth Seminar on Electrochemistry at Karaikudi during December 1962. The object of this Seminar is to provide an opportunity for scientists and technologists connected with different disciplines of electrochemistry and electrochemical engineering to discuss topics of mutual interest. Contributions are particularly invited relating to personal experiences and data on operation of electrochemical plants. Copies in duplicate of the papers have to reach the Institute by November 15, 1962.

European Federation of Corrosion

The Third Congress of the European Federation of Corrosion will be held at Brussels, Belgium during June 1963. It will be divided into 6 Sections: basic studies, protection by metallic coatings, protection by inorganic coatings, protection by organic coatings, inhibitors and passivating agents, and cathodic protection. Arrangements have been made for plenary lectures and presentation of about 50 papers by specialists in the field. The proceedings will be published.

Co-ordination Chemistry Conference

Stockholm and Uppsala in Sweden were the venues for the Seventh International Conference on Coordination Chemistry held in June 1962 (This Bulletin, Vol. 11, No. 1, 6, 1962). The sponsors have published enlarged abstracts of the 286 contributions from 29 countries including India (Proc. 7 ICCC, 392 pages, 1962). The 8 plenary lectures will be published in 'Pure and Applied Chemistry'.

Platinized Titanium Anodes

Three new forms of anodes introduced by Technic, Inc., U.S.A., include platinum plated perforated titanium anodes, titanium Hull Cell anodes, and titanium rod for inside anodes. Costing much less than solid platinum, these anodes may be substituted for solid platinum in rhodium, acid gold, platinum, palladium, and rhenium plating solutions. The perforated anodes are said to be ideal for plating printed circuits and in other applications. —Products Finishing, Vol. 26, No. 8, 108, 1962.

Zinc Anodes for Cathodic Protection

In recent years a certain amount of misgiving has been felt about the use of magnesium anodes for the internal protection of tanker ballast compartments. It is claimed that the previous technical disadvantages of zinc have been overcome completely by the new design by Mapel with the following advantages: (1) not liable to occlusion by wax deposits from crude oil cargoes, (2) current output constant over entire life, and (3) very long installation life — can be 8 years at 25 per cent ballast period; this means a very economical installation, and even in the case of a ship at 50 per cent ballast it provides a full 4-year life without renewal. The anode is, furthermore, suitable for use in black oil white oil cargoes and it is the closest approach yet achieved to a universal system.—Corrosion Engineer, Vol. 4, No. 6, v. 1962.

Zinc rather than magnesium anodes were chosen for the cathodic protection of Cheltanham 18-inch steel trunk water mains because their life was 4 to 5 times longer and their effective driving voltage was lower, causing less electrical interference. Fifteen pound zinc anodes, each having a current output of 20 milliamperes, were used. —Zinc Abstracts, Vol. 20, number 1864, 1962.

Nickel-Zinc Batteries

Investigations carried out in the U.S.S R. show that the performance of nickel-zinc batteries, incorporating sintered nickel oxide and powder zinc electrodes, is superior to that of copper-nickel batteries and approaches that of silver-zinc. —Zinc Abstracts, Vol. 20, number 1901, 1962.

Corrosion Engineering Course

The British Association of Corrosion Engineers held a Summer School on Corrosion Engineering during September 1962 at Weybridge, Surrey, England. The programme for the course was (1) theory of corrosion, anti-corrosion engineering, management communications, (2) coating technology, surface preparation, non-ferrous metals, metallic coatings, (3) sacrificial coatings, plastics, paints, (4) cathodic protection, corrosion economics, corrosion surveying, (5) design engineering, presentation of material, course project exercises.

The Menace of Corrosion

During the formation of the Illawarra Division of the Australasian Corrosion Association, the President stressed the need for a Corrosion Association. It was estimated in 1955 that corrosion

cost the world at least 10,000 m.pounds annually, and 200 m.pounds in Australasia (Australia and New Zealand). It is a tragedy that so much of this huge cost could be prevented by research and the application of existing knowledge. It is remarkable how little is known about the cost and waste caused by corrosion in otherwise highly efficient industries. He then pointed out that many people did not fully appreciate the scope of the corrosion field. Corrosion affects everybody including many who do not realise what it is costing them. — Australasian Corrosion Engineering, Vol. 6, No. 5, 15, 1962.

Corrosion Courses in Australia

The Australasian Corrosion Association arranged two courses on 'Corrosion and Plant Maintenance' and 'Underground Corrosion' respectively commencing in July and August 1962 at the University of N.S.W. The first course covered (1) introduction to corrosion control in plant maintenance, (2) design and selection of materials for corrosion control, (3) selection and application of surface coatings, (4) specifications, records and field measurements, (5) practical examples of common corrosion failures, and (6) cost factors in corrosion control. The following were the topics for the second course: (1) mechanism of underground corrosion, (2) factors affecting underground corrosion, (3) cathodic protection — sacrificial anodes, (4) cathodic protection-impressed current and stray current drainage, and (5) specifications and cost factors in controlling underground corrosion.

Corrosion-Aerospace Metals Symposium

The Second International Congress on Metallic Corrosion and the 19th NACE Conference to be held in New York during March 1963 have arranged an Aerospace Metals Symposium. Propellants, rocket motors, materials of construction, and component reliability are amongst the suggested topics.

Nickel-Cadmium Accumulator gives 50 Flashes per charge

The new Mecablitz 108 electronic flash made by Metz-Apparate-Werke of Fuerth, Bavana is small in size, 9 × 12 × 3 cm, and gives 50 flashes on one charge in a 9-second series (exposure index 30-34 using 17° DIN film). This powerful performance is largely due to the use of a nickel-cadmium accumulator. These accumulators, which are also used in 106, 107 and 502 models, are gas-tight, need no maintenance, and can be recharged simply by plugging into the mains supply. The equipment will also give an unlimited series of flashes using mains power directly at 110 or 220 volts.—Inco-Mond, No. 1, 7, 1962.

Industrial Coatings

The June 1962 issue of Materials Protection presents a large amount of practical information in the field of coatings: five NACE technical committee reports on pipe wraps, pipeline felt, and urethane and chemically cured coal tar coatings; twelve papers on laboratory evaluation, pipeline coating, epoxy formulations, glass coatings, flame sprayed and diffused coatings, internal pipe coating, latest developments, miscellaneous.

CITCE Meeting

The 13th meeting of the International Committee for Electrochemical Thermodynamics and Kinetics was held in Rome during September 1962. One hundred and fortyone papers were presented by authors, including many outstanding scientists, from 25 countries. The sessions covered general electrochemistry, electrochemical equilibria diagrams, electrochemical nomenclature and definitions, experimental methods in electrochemistry, batteries, corrosion, electrochemical kinetics and electrochemistry of high temperatures.

Corrosion Advisory Bureau in India

The Metals Committee of the Council of Scientific and Industrial Research, India has set up a Corrosion Advisory Bureau at Jamshedpur. The object of this Bureau is to coordinate research work on corrosion carried out in various centres: to give technical advice on corrosion problems and prevention methods; and to prepare bulletins for dissemination of information on different aspects of corrosion.

Corrosion of Reactor Metals

The majority of the 47 papers presented at the Conference on corrosion of Reactor Metals held at Salzburg during June 1962 contained new information, a considerable amount of new data and theoretical concepts never reported previously. The two most modern fields of technology, nuclear and space engineering, are placing drastically increased demands on numerous materials, including those of high corrosion resistance. The International Atomic Energy Agency, which organized this Conference, has devoted a considerable part of its activities to specific reactor problems. The papers were discussed under four main headings: (1) general theoretical and fundamental studies on corrosion, (2) corrosion of nuclear materials in reactor operation, (3) corrosion of canning

materials, and (4) corrosion problems in adjacent circuits and in-pile and out-pile corrosion tests.

Industrial Finishes Exhibition

The Second International Industrial Finishes Exhibition will be held at London from May 20 to 24, 1963. The following branches of the finishing industry will figure prominently : electroplating, metal pretreatment, paints, plastic coating, vitreous enamelling, metal colouring and anodizing.

Zinc Anodes Prevent Corrosion of Pleasure Boats

Zinc alloy anodes to cathodically protect underwater metal parts of moored pleasure boats against salt water corrosion are marketed by American Smelting and Refining Co., New York. When boat is moved, the anode is hung over the side on the rope. When craft is under way, the anode is hauled aboard. Called the Guppy, the five-pound anode is 11 inches long.—Materials Protection, Vol. 1, No. 7, 75, 1962.

Gold Coated Plastic Suit

A safety suit's gold coating protects the wearer against flash temperatures to 3,000 F; to 1,000 F for 30-60 seconds, and 500 F for hours This 15 pound suit, designed for personnel working with missile fuels, is inert to most chemicals, has own air supply and two-way transistor radio. It is made of gold-metallized Teflon FEP-fluorocarbon film laminated to a TFE-fluorocarbon fiber. Called Armalon, the material is produced by E.I. du Pont de Nemours, Wilmington, Del, U.S.A.—Materials Protection, Vol. 1, No. 7, 78, 1962.

India Exports Aluminium Conductors.

It is heartening to note that the Aluminium Industries Ltd., Kundara, Kerala State, are exporting aluminium conductors and accessories. They have been the first in India to establish the aluminium conductor industry, aluminium rod making unit, as well as a high tensile galvanized wire making plant. The country is today geared for a total annual production of 30,000 tons of ACSR, aluminium conductors—steel reinforced, and AAC, all-aluminium conductors, of which this firm accounts for 13,000 tons. The company has been the first in many other items including CAC, covered (insulated) aluminium conductors for outdoor weather-proof and indoor wiring applications. One will find today over half a million kilometres of Alind ACSR and AAC giving trouble-free service to several electric supply undertakings. The CAC is doing an equally efficient job—some 40 million core meters are in operation.

— T. L. R.