# News Section

## SOCIETY REPORTS

### Meetings

The Third and Fourth Meetings of the Governing Council of the Society were held on April 2 and May 13, 1971 respectively at the Indian Institute of Science, Bangalore.

A lecture on Metal Pretreatment (Phosphating) was delivered by Sri T. A. S. Mani, Dy. General Manager, Addison Paints and Chemicals Ltd., Madras on May 10, 1971 at the Institution of Engineers (India), Mysore Centre, Bangalore under the auspices of the Society. It was presented by Dr. K. I. Vasu due to the unavoidable absence of the speaker.

The Eighth Annual General Body Meeting of the Society was held on June 24, 1971 at the Indian Institute of Science, Bangalore with Dr. A. N. Kappanna in the Chair. The Annual Report for 1970 was presented, and the Audited Statement and Accounts and Balance Sheet as at December 31, 1970 were adopted. The following were elected to the Council for 1971-72: (1) Dr. T. L. Rama Char (President), (2) Mr. B. K. Balu (Vice-President), (3) Dr. S. Krishnamurthy (Secretary-Treasurer), (4) Dr. K. I. Vasu (Associate Editor), (5) Dr. A. N. Kappanna, (6) Dr. S. Soundararajan, (7) Mr. R.A. Shah, (8) Mr A. K. Bose and (9) Dr. S. K. Panikkar.

The Fifth Meeting of the Council was held on June 24, 1971 at the Indian Institute of Science. The following Editorial Board for the Journal was constituted for 1971-72: (1) Dr. T. L. Rama Char (Editor) (2) Mr. B. K. Balu, (3) Dr. S. Krishnamoorthy, (4) Dr. K. I. Vasu (Associate Editor), (5) Dr. A. N. Kappanna, (6) Mr. A. K. Bose, (7) Mr. K. R. G. Nair and (9) Mr. S. K. Narang.

### Refresher Course on Metal Finishing

This Course covering 20 lectures will be held at Bangalore during November 1971 jointly with the Mysore Centre, The Institution of Engineers (India). The topics cover fundamentals: substrate and pretreatment, metallic-surface conversion-organic finishes, testing and analysis, applications and recent advances. The details will be announced after the programme is finalised. Interested personnel from academic institutions and the industry who wish to register for the Course are requested to write to the Editor.

### Subscription Rates

Due to unavoidable circumstances arising out of the increase in the cost of printing etc., the Annual Subscription for the Journal will be revised to Rs. 30 Inland and Rs. 40/- Foreign, effective January 1972. Special Trade Discount of 15 per cent continues.

## GENERAL NOTES

### Cost of Car Corrosion

Underbody rust is costing Britain's motorists $ 250 million a year. One of the main causes of corrosion is undoubtedly the use of de-icing salts on the roads in winter. To combat this, galvanized steel should be used for parts of vehicles exposed to roadwash, particularly for those areas which are difficult to clean. Apart from the use of zinc coatings, it is estimated that the bodies of nearly half the total of nine million motor vehicles to be made in Europe in 1971 will be protected by an electrodeposited primer coat. This technique is also growing in importance in Japan. In the U. S. A. about half a million 1070-model cars had complete electrocoated bodies and the figure is likely to treble in the 1971-model year. The U. S. S. R. is also showing interest in this technology.-Corrosion Prevention and Control.

### Interfinish 1972

Basle in Switzerland is the venue for the 8th Congress of the International Union for Electro-

deposition and Surface Finishing, and the 3rd International Exhibition for Surface Treatment during September 1972. The technical programme will cover: coatings–metallic, other inorganic and organic; pre–and after-treatment processes; quality control and test methods; waste disposal.

**Chemical Engineering Conference:**

"Recent Advances in Chemical Engineering" is the theme for the Silver Jubilee Session of the Indian Institute of Chemical Engineers to be held at Calcutta during 1972. The following topics will be discussed: (1) energy and mass transfer. (3) chemical reaction engineering and thermodynamics, (3) process dynamics and control, (4) biochemical engineering. (5) process development; equipment design and materials of construction, and (6) chemical engineering economics and management.

**Conference on Solid Surfaces:**

An International Conference on Solid Surfaces will be held in Boston during October 1971, in conjunction with the Fifth International Vacuum Congress The aim is to provide a broad forum for the presentation of outstanding scientific work in areas of surface science which are currently active and progressing rapidly.

**Electron Microscopy Conference:**

The Fifth European Congress on Electron Microscopy will be held at the University of Manchester during September 1972. The papers for discussion will be concerned with the electron microscope as an instrument and as a physical technique.

**Symposium on Lead Acid Batteries:**

New Delhi was the venue for the above Symposium held during March 1971 by the Indian Lead Zinc Information Centre, New Delhi and SAEST, Karaikudi to celebrate Lead Power 71. Preprints of the following papers are made available: (1) Materials for lead-acid battery grids. (2) Recent trends in alloy material for lead-acid battery grid, (3) Dispersion strengthened lead in batteries. (4) Suggested grid alloy composition for lead-acid batteries, (5) A comparative study of some antimony–free lead battery grid alloys (6) Separators for lead acid batteries, (7) Enhanced battery life through improved separator design, (6) The electric car today, (9) Lift better electrically, (10) Characteristics of various power sources, (11) Research on lead-acid batteries at the CECRI, Karaikudi, (12) Recovery of lead from scrap battery and (13) Recovery of lead from battery scrap. The proceedings will be published.

**Powder Coating:**

There are several articles of interest in Industrial Finishing and Surface Coatings, December 1970: (1) Electrostatic powder coating, (2) Powder coating: the Dutch Scene, (3) Electrostatic powder coating. (5) Pretreatment for powder coating, materials, (6) Fluidized bed coating fundamentals, (7) Electrostatic application-the key to viability, (8) Getting powder to the gun and (9) Powder coating plant for the partially sighted.

**Electrocoating Conference:**

Chicago was the venue for Electrocoat'71, a national conference on electrodeposition of paint during April 1971. Papers covered 4 broad areas: pre-treatment, chemical coatings, equipment and installation experiences.

**Energy Consumption:**

Some 1,660 million people living in the developing countries used 25 per cent less energy in 1968 than did the 185 million population of the 6 countries of the Economic Community. The formers' share was 8.2 per cent of the total world energy consumption, compared with 4.6 and 7.1 per cent respectively in 1950 and 1960. Participant J, 5, No. 7, 25, 1971.

**Corrosion of Copper and Its Alloys:**

A Sympopsium on the above will be held at Ahmedabad during October 1971 under the sponsorship of the Indian Copper Information Centre, Calcutta, Corrosion Advisory Bureau, CSIR, and the University School of Sciences, Gujarat University.

**Energy from Artificial Sun:**

The development of a new form of energy to replace conventional fuels is expected to be ready by 1985 from the Max Planck Society' Institute for Plasma Physics in Munich. In an age

when conventional fuels are not only running to comparatively short supply, but also produce polluting side-effects and nuclear reactors leave their radioactive waste behind, the development of a fuel breeding fusion system of an artificial sun is not only revolutionary but also essential. Besides there is the main advantage of its unlimited potential.– German News, Vol. 13, No. 7, 10 (1971).

**Stress Corrosion Symposium:**

The F. I. P. Commission on Steel for Prestressing is organizing a Symposium on "Stress Corrosion" in Delft, The Netherlands dur ng September 1971.

**Electronics in Industry:**

On the occasion of the 2'st international Technical Exhibition "Electronica 71", the First international Conference on "Applications of Electronics in the industry" will be held in Turin, Italy during September 1971. It will deal with: (i) Electronics and computers applied control and operations of machines and processes,(2) Static power controls of operating machines, (3) Electronic equipment for the automobile and (4) Electronics and Information.

**Course on Die Casting:**

The Zinc Alloy Die Casting Society, New Delhi is organizing a refresher course on Die Casting during August 1971. It will be of interest to both aluminium and zinc die casters, and the topics for discussion embrace a wide field.

**Metal Finishing Congress:**

A European Metal Finishing Congress was held in Amsterdam during March 1971 under the sponsorship of Oxy Metal Finishing Europe. A wide range of topics were discussed: precious metal plating, equipment, pollution contro'; printed circuit production, plating on plastics.

**Corrosion Conferences:**

The Institution of Corrosion Technology and the Institution of Mechanical Engineers held a Joint Informal Conference on Corrosion in London during April .971. Six sessions covered: corrosion problems and major industries, economic aspects, education and training, research-development and advisory services.

Liege is the venue for the Sixth Scandinavian Corrosion Congress, May 1971.

**Conferences in Electrochemistry:**

A Euchem Conference on Organic Electrochemistry was held at Ronneby Brunn, Sweden during June 1971.

Newcastle-upon-Tyne was the venue for a Symposium of 20 papers on Electrochemical Engineering during March-April 1971.

**What do Chemists read:**

The above is the title of an article in "Chemistry in Britain", January 1971. It is stated that most British Universities are spending at least £ 3000 per year on chemical journals alone. The survey suggests that the universities are not getting their money's worth out of these journals.

**Petroleum Conference:**

The proceedings of the First Indian Petroleum Conference (Refining) held at Baroda during March 1971 have been published in petroleum and Hydrocarbons, April 1971. There are 10 papers including those on corrosion and its prevention and environmental conservation.

**Vacuum Coating**

There are several articles of interest in this field in Industrial Finishing and Surface Coatings, February: (1) The role of lacquers in vacuum metallising, (2) Some vacuum coating equipment, (3) The development and applications of vacuum coating, (4) Aspects of vacuum coating plant, (5) Vapour deposited polymer and (6) Twin vacuum coating plants popular in E. Europe.

**Bringing Science under Law:**

An article with this title has appeared in the American Review, Vol. 15, No. 3, 56, 1971. It is brought out that today there is almost instant transfer from scientific theory to technological fact. When the facts are as ominous as the hydrogen bomb and as far-reaching as computer the argument is that the time has come to impose legal restraints on developmental science. Further, there is an international, or trans-national, aspect to the problem of constitutionalizing science.

**International Society of Electrochemistry:**

The 23rd Meeting of the International Society of Electrochemistry (formerly CITCE) is scheduled at Stockholm during August–September 1972. The technical programme will be covered in 6 sections: electrochemical thermodynamics, electrochemical kinetics, experimental methods in electrochemistry, high temperature electrochemistry, corrosion and batteries.

**Printed Circuits :**

Industrial Finishing and Surface Coatings, January 1971 contains several interesting articles on the above: (1) Some printed circuit test equipment, (2) PCB plating planned for quality, (3) Current problems in plating through holes, (4) Around the printed circuit and (5) Plating in the printed circuit industry.

**Paint for Protection :**

There are 4 papers covering this topic in Anti-Corrosion Methods and Materials, March 1971: (1) Rational processes for steel protection, (2) The changing requirements for the preparation and painting of structural steel, (3) A tough finish for a rugged job and (4) The role of chlorinated rubber in anti-corrosive paint systems.

**Metal Finishing Course :**

The Metal Finishing Association of Southern California has sponsored a two-year course in the technology and management aspects of job metal finishing in co-operation with Loss Angeles Trade–Technical College. It covers the major fields of polishing, and is specifically designed to train middle management personnel for the plating firms in the region.

**Akimov-Institute in Prague :**

On the occasion of the completion of 20 years of this Institute, a scientific session dealing with atmospheric corrosion of steel structures was organized. A brief report on the activities of the institution can be found in Korrozios Figyelo, Vol. 10, No. 6, 1970.

**Materials in the News :**

Marine 50 is the name for the **new steel** developed for marine environments by Nippon Kokan in Japan. It incorporates several features said to give properties superior to those of conventional low-alloy steels developed for use in sea water, including improved weldability and toughness, and outstanding resistance to corrosion when submerged or splashed. The major difference between those and the NKK steel is the absence of phosphorus. The strength and other properties conform to the requirements of JIS G 3106 SM50, which are similar to those of ASTM A440. It is estimated that in the next ten years Japan alone will require some 43 million tons of steel for development of ocean resources and in allied fields.—Corrosion Prevention and Control. Vol. 17, No. 6, 7, 1970.

Mechanical property and interference reaction studies of **titanium-alumina composites** forms the title of a paper in Metals Engineering Quarterly, February 1971. They are being considered as alernatives to titanium alloy matrix composites reinforced with boron and beryllium for use in advanced air breathing propulsion systems (fan and compressor blades).

**'Soft' magnetic alloys** play a very important role in civilian and military products. Their heat treatment and testing for magnetic properties has been described in Metals Engineering Quarterly, February 1971: alloys of iron with nickel, cobalt, silicon; ferritic stainless steels, commercial iron and commercially pure iron.

Some 965 tons of 18 Cr–9Ni **stainless steel** has been used in the 5.7 million gallons storage plant of the Swiss Alcohol Board at Daillens, Switzerland. This material was chosen for the tanks because tests on surface coatings and materials revealed it had all the necessary corrosion resistant properties.—News Fillers, International Nickel (India) P Ltd., Bombay, February 1971.

**A special cast iron** alloyed with 3 percent nickel is used for 20 butterfly valves handling river water with a high chloride content in a new nuclear power station due to start operating in 1972 at Wurgassen, West Germany This

was selected to resist corrosion of the valve sealing faces, which would impair proper functioning. —News Fillers, International Nickel (India) P. Ltd., Bombay, February 1971.

A material new to the electronics industry—**copper coated steel**—is said to be reducing the manufacturing costs of certain components. Produced by Armo-Pittsburgh S. A., Liege, it has a combination of special properties which facilitates metal forming and subsequent plating economically —Corrosion prevention and Control, Vol. 18, No. 1, 6, 1971.

The corrosion resistance for zinc and its alloys has been greately improved recently through the development of anodized coatings. **Zinc anodized coatings** are formed as a result of an anodic spark discharge which commences on the surface of the part at about 70V and continues at an increasing intensity until process termination. The point temperatures produced by the discharge are sufficiently high enough to fuse the coating into a fritted structure containing zinc oxides, chromates, phosphates and other compounds, depending on the coating. They can be applied to zinc in its wrought or die cast form, and to zinc coatings such as electroplated, galvanized, sprayed or deposited. Four individual coatings can be obtained, each exhibiting a different colour. They are likely to be used wherever corrosion endurance requirements for zinc cannot be met with conventional electrochemical or metal finishing methods.—Corrosion Prevention and Control, Vol. 18, No. 1, 7, 1971.

Highveld Steel and Vanadium Corpn. Ltd., London has reviewed in two volumes the published literature on **vanadium structural steels** The first, relating to as-rolled and normalised steels, was published in November 1970. The second one is on fully heat-treated steels generally of a higher yield strength.

The Fourth International **Lead** Conference will be held in Hamburg during September 1971. It will cover batteries, cable sheaths, metallurgy and technology. **Mineral production 1971** and its importance in world economy has been discussed in World Mining, March 1971. The mineral resources with their global output reach $128,000 million, and the annual consumption is calculated to be $ 17,500 million, and $ 200,000 million with the addition of pig iron and steel. The statistics covering many parts of the world are given.

International Nickel announces a new **high-strength low alloy** steel: nickel-copper-niobium, known as Nicuage Type 1. It has been successfully launched in the USA and France for a number of applications in the fabrication of highly stressed lightweight structures. The material is four times more resistant to corrosion than mild steel, and its low carbon content gives it outstanding cold-formability and weldability. Press Information, International Nickel (India) P. Ltd., Bombay, G. 8, May 1971.

**Pollution in the News**

Honeycat platinum catalyst systems have been successfully evaluated and used in a wide range of industrial processes that emit organic fumes and odours. This offers considerable scope for the control of various types of **air pollution.**—Platinum Metals Review, Vol 15, No. 1, 9, 1971.

**Air-pollution** control is amongst the topics reviewed in Metal Finishing, January 1971 under organic (paint) coatings, processes and equipment. It is stated that some of the most successful pollution fighters in the U.S.A. are companies with common sense policies and programmes for improving the environment not only because they are interested in the welfare of their community, but because profits are generated on the products they sell, not on the materials dissipated in the air or washed down the river. The Society of Automative Engineers have several proposals relative to pollution free finishing operations. The National Paint, Varnish and Lacquer Association has completed a three-year study on the smog forming tendencies of organic solvent vapours. The National Air Pollution and Control Administration is rapidly increasing the number of air sample collection and monitoring devices that are in active use: from 1,101 in 1968 to 3,775 units in 1973. The disposal of waste solvents is a real problem to the paint industry.

A Symposium on **Noise Pollution** and Health was held at New Delhi during March 1971 by the All India Institute of Medical Sciences and National Physical Laboratory. **Ecology and eutrophication** is the title for the editorial in Metal Finishing, February 1971. **Population, resources, and environment** forms the topic of an article in The American Review, April 1971. The British Insulated Callender's Cables Ltd has set up a **pollution panel** to consider the problems of pollution, not only applied to industry but also to the environment outside the factory. The Royal Society of Health Journal, March-April and July-August 1970 contains the following articles on environmental problems: (1) Environmental improvements in relation to housing and traffic, (2) your water today—who used it last? (3) The safe environment and 4) Environments in relation to derelict land. **Noise pollution** in aircraft manufacturing and control measures has been discussed in HTS Digest, April 1971.

The warning 'The battle against pollution in all its forms must be continued if four environment is not to be irreparably damaged" is given in Stainless Steel, No. 17, 1971 while describing the contribution made by **stainless steel** in many fields in the fight against **pollution.**" Challenge for Survival: Land, Air and Water for Man in Megalopolis" is the title of a book by P. Dansereau (Ed.), Columbia, 233 pages, 1970. This study of **man in relation to his environment** throws new light on the ecology of large cities. Academic Press, New York and London have published the book "**Chemical Ecology**": E. Sondheimer and J. B. Simeone, 1970, 336 pages.

The ECE and the Government of Czechoslovakia sponsored a Symposium on **Problem relating to the Environment** at Prague during May 1971. It provided an opportunity for an exchange of views on selected problems in this field in Europe. Melbourne was the venue for the First **Environmental Seminar** organized during April 1971 by the Australian Mining Industry Council, Environmental Quality Committee and the Australasian Institute of Mining and Metallurgy.

Chemistry in Britain, February 1971 contains an article on **lead pollution**—a growing hazard to public health. The legislative and economic aspects have also been touched upon. **Pollution controls** for the metal finishing industry was the theme adopted for a convention and management seminar held at Miami Beach, Florida by the National Association of Metal Finishers during March 1971. A **declaration on the environment** and other matters was presented to the Secretary-General of the United Nations during May 1971 by a group of six environmental scientists. They were told that the battle for human survival could only be won by all nations and peoples joining together in a concerted drive to preserve life on Earth (UN Weekly Newsletter, Vol. 19, No. 21, 1, 1971).

Under the caption "**Plan, not pollute**" a professor comments that "The North Sea could become the industrial cesspool of Europe, and we know too little to make any safe Predictions about the effects of this pollution on marine life". A total of 1,200 tons of sulphuric acid a day are dumped 19 km. north-west of Heligoland. No attempt is made to buffer the sea by combining this with alkaline wastes. About 18,000 tons of formalin go into the sea each year off the coast of Norway from a single canning factory, and discussions are under way in Germany for the disposal of 3 million tons of iron oxide waste. In Europe there is a major loophole in the laws of waste disposal; far too much is left to industry. Reader's Digest, Indian Edition, Vol. 98, No. 589, 16, 1971; from The Guardian, London.

Man is an endangered species, and nobody can save him but himself: is the conclusion of an article "Confessions of a Polluter" in Reader's Digest, Indian Edition, Vol. 98, No. 589, 87, 1971. A case is made out for coservation, the discussion centering round land, air and water pollution. The remedy suggested is: make every effort not to pollute or create litter; try to recycle resources that you use; don't waste; nothing will work unless the world's population is cut down.

Two articles under the title: "**Environment: World Problem**" have appeared in Span, May 1971: (1) The myth of omnipo-

tence and (2) Saving our spaceship. It is pointed out that deafened by the shriek of technology, man now faces the realization that his scientific achievements often undermine the very environment he is trying to improve. Here is a description of the earth's delicate ecological balance that is threatened by environmental pollution, together with some measures being taken to remedy this global problem. It is concluded that the future of environmental conservation depends on the "new alliance" between the scientist and the citizen. The ecosystem does not observe national boundaries, and the second article gives examples of the determination of the community of nations to take concerted action.

An entirely new concept for **air pollution measurement** is the basis of Enviro Metrics analysers from California. They are unique in that they use pollutant-selective plug-in sensors called Faristors. This method of analysis is totally dry, electronic, highly selective and quickly responsive to pollutant inputs. Zero-maintenance is another advantage. They are suggested for on-the-spot analysis of stack, auto exhaust and ambient applications. —Electro Technology, Vol. 14, No. 5, 167, 1970.

**Environmental testing** applied to electronic components has been discussed in Electronic Engineering, Vol. 42. 508, June 1970, with reference to temperature, humidity and vibration.

—T.L.R.


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