

## ABSTRACTS

### DEPARTMENT OF GENERAL CHEMISTRY

1. THE DEVELOPMENT OF THE ELECTROCHEMICAL INDUSTRY IN INDIA. T. L. Rama Char, *J. Electrochem. Soc.*, 1953, 100, 7 C.

Review of recent developments of the electrochemical and electrometallurgical industries in India: electric power production, caustic soda and chlorine, ferro-alloys and aluminium, control of industry. Includes statement showing the capacity and production of electrochemical-metallurgical products.

2. UTILIZATION OF CHROMINE IN THE ELECTROLYTIC PRODUCTION OF METALS. T. L. Rama Char, *Ind. India Section, Electrochem. Soc.*, 1953, 2 (5), 12.

Outlines the possibilities of using India's mineral resources for the production of aluminium, manganese and titanium by the chloride electrolysis.

3. ELECTROPLATING: SOME RECENT DEVELOPMENTS AND FUTURE POSSIBILITIES. T. L. Rama Char, *Ind. India Section, Electrochem. Soc.*, 1954, 3 (2), 49.

Review of the developments in new metals and alloys as well as new plating baths for electroplating. Amongst new metals, tin alloys and uncommon metals have been discussed; new baths include the fluoride, sulphamate and pyrophosphate. 75 references.

4. THE SULPHAMATE BATH FOR CADMIUM-ZINC ALLOY PLATING. T. L. Rama Char and J. Mathar, *Ind. CECRA, Kovilakal*, 1954, 1 (3), 27.

The sulphamate bath gives cadmium-zinc alloy deposits of any desired composition from 1 to 99% cadmium by varying the operating conditions. Single metal and alloy deposition potential curves have been presented, and the effect of metal content and pH of electrolyte, *v. d.*, temperature and agitation on alloy plate composition studied.

5. PYROPHOSPHATE COMPLEXES OF NICKEL AND COBALT. J. Vaid and T. L. Rama Char, *Chem. Sci.*, 1954, 23, 396.

Complex formation between the pyrophosphate ion and nickel and cobalt has been studied at room temperature by potentiometric, conductometric and spectrophotometric methods. The ratio of pyrophosphate to metal in the complex has been found to be 1 as well as 2 for both the metals.

6. ELECTRODEPOSITION OF NICKEL FROM THE PYROPHOSPHATE BATH. S. K. Panikar and T. L. Rama Char, *J. Sci. and Ind. Res.*, 1955, 14 B, 603.

The pyrophosphate bath has been found to be suitable for the plating of nickel. It has good throwing power and can be operated at high c.d.s. The optimum plating conditions have been stated.

7. **ELECTRODEPOSITION FROM THE PYROPHOSPHATE BATH.** J. Vaid and T. L. Rama Char. *J. Sci. and Ind. Res.*, 1956, 15 B, 508.

Optimum conditions have been established for the electrodeposition of zinc from the pyrophosphate bath. The deposits are comparable to those from the cyanide bath. The pyrophosphate bath is satisfactory for zinc plating and possesses some advantages over the cyanide.

8. **ELECTRODEPOSITION FROM SULPHAMATE SOLUTIONS. PART I. NICKEL.** S. Satyanarayana and T. L. Rama Char. *J. Sci. and Ind. Res.*, 1957, 16 A, 78.

The sulphamate bath has been found to be satisfactory for the plating of nickel. It gives good quality deposits over a wide range of experimental conditions, and is comparable to the sulphate bath.

9. **ELECTRODEPOSITION FROM SULPHAMATE SOLUTIONS. PART II. ZINC.** S. Satyanarayana and T. L. Rama Char. *J. Sci. and Ind. Res.*, 1957, 16 A, 85.

Optimum conditions have been established for the electrodeposition of zinc from the sulphamate bath. The bath is comparable in performance to the sulphate bath.

10. **ELECTRODEPOSITION FROM SULPHAMATE SOLUTIONS. PART III. NICKEL-ZINC ALLOYS.** S. Satyanarayana and T. L. Rama Char. *Sci. India Section, Electrochem. Ser.*, 1956, 5(4), 83.

A bath containing nickel and zinc sulphamates has been used for the co-deposition of nickel and zinc. At cathode efficiencies close to 100%, the nickel content in the alloy deposit is very low. It is possible, however, to increase the nickel content to high values at the sacrifice of efficiency.

11. **ELECTRODEPOSITION FROM SULPHAMATE SOLUTIONS. PART IV. CADMIUM.** J. Mathar and T. L. Rama Char. *Sci. India Section, Electrochem. Ser.*, 1957, 6(1), 8.

The optimum operating conditions have been established for the electrodeposition of cadmium from the sulphamate bath. Its performance is satisfactory over a wide range of experimental conditions.

12. **TIN PLATING FROM THE PYROPHOSPHATE BATH.** J. Vaid and T. L. Rama Char. *J. Electrochem. Soc.*, 1957, 104, 202.

The complex stannous pyrophosphate bath was found satisfactory for the electroplating of tin. It gave good quality deposits over a wide range of experimental conditions. Addition agents like dextrin increased the brightness of the deposits. This bath has several advantages over the stannate bath.