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Physical Sciences Section

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SOME NEW ORGANIC REAGENTS FOR COPPER AND IRON

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(Received April 7, 1980; revised February 28, 1981)

The new compounds, benzil-N-phenylamino-ethaneimine, 2,2′-pyridil-N-phenylaminoethaneimine, and 6,6′-dimethyl-2,2′-pyridil-N-naphthylamino-ethaneimine, have been prepared by condensation of the appropriate α,α'-diketone and N-aryl substitued 1,2-diaminoethanes. The compounds have been characterized and their reactions with copper(I) and iron (II) ions have been investigated spectrophotometrically. These compounds behave as typical ferroin – and cuproin – type ligands towards these ions.

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A PRELIMINARY STUDY OF JUTE-PULP PAPER AS A DIELECTRIC MEDIUM IN CAPACITORS

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(Received December 14, 1978; revised March 19, 1981)

A perliminary study is made for checking the suitability of indigenous paper as a dielectric medium. For this, both the dielectric constant and the loss tangent have been measured for six types of papers. It is concluded that two types of jute-pulp paper may be useful as a dielectric medium in paper capacitors.

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DISTRIBUTION STUDIES OF SOME METAL IONS IN CHLORIDE MEDIA

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(Received July 9, 1980)

Distribution coefficients have been measured for the partition of metal ions; Mg(II), Co(II), Ni(II), Cu(II), Zn(II) and Fe(III) between cation as well as anion exchangers and water – sodium chloride solutions. The values of partition coefficient K_D show the importance of chloride media as complexing agents giving anionic complexes.

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DETERMINATION OF SMALL AMOUNTS OF SILICON IN STEEL DRILLINGS USING X-RAY FLUORESCENCE TECHNIQUE

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(Received June 2, 1980., revised March 4, 1981)

A set of standards for the determination of silicon in steel drilling samples by X-ray fluorescence has been prepared by melting weighed quantities of silicon and iron. The calibration graph was found to be reliable when employed for three different steel drilling samples of certified silicon contents. Only 0.1 g of sample is required.

The Si kα fluorescence intensities of the standards were found to be about one third of those of silicon–iron powder mixtures. An explanation is attempted for this on the basis of a mathematical treatment following Claisse and Samson [1].

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ON EQUINOCTIAL ANOMALY IN $N_m F2$ DURING HIGH SOLAR ACTIVITY

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(Received June 26, 1980)

This study has been carried out for the high sunspot years at low and mid–latitude stations situated in northern hemisphere. The equinoctial anomaly at Bombay is found stronger than that at the mid – latitude stations. Also, it has been found that the time of occurrence of anomaly is different for the stations under study.

Short Communication

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DETERMINATION OF TWO SPIRO NON-STEROIDAL OESTROGEN POTENTIATING AGENTS USING HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY WITH ELECTROCHEMICAL DETECTION

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Short Communication

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DIELECTRIC AND DIPOLAR INTERACTION STUDIES OF A NON-POLAR SOLVENT INDUCED INFRA-RED FREQUENCY SHIFTS

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Biological Sciences Section

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THE PUPAL AND PRE-PUPAL STAGES OF THE MALE SIND LAC-INSECT

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(Received August 20, 1980)

Lac is the product of the female insect and to forecast a lac crop the sex-ratio has to be established as early as possible. The study describes the larval stages of the lac insect with special reference to the pupal and prepupal stages of the male Sind lac insect.

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ORGANISMS OF PUBLIC HEALTH SIGNIFICANCE IN FISH AND SHRIMP FROM KARACHI COASTAL WATERS – A SURVEY

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(Received May 25, 1980; revised December 23, 1980)

Using standard procedures, a total of 131 samples of fish and shrimp were examined for the organisms of public health significance. Samples were collected from the local retail markets, from the fish harbour, as well as from the trawlers before landing at the harbour. Samples collected from the markets appeared to be more polluted than those from the harbour. Harbour samples were also excessively polluted, if compared with those of trawler samples. 14% of the harbour samples and 5% of the trawler samples yielded *Salmonella.* All the *Salmonella* isolates were confirmed serologically as *Salmonella enteritidis* paratyphi A or B. Proposals for the possible improvement in the present situation are made.

Technology Section

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FATTY ACIDS FROM HYDROCARBONS

Part I. Oxidation of Paraffin Wax from National Refinery (Ltd) Karachi

M. Saleem, M. Yamin, Naeem Shakir, S. A. Khan and M. K. Bhatty

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(Received July 29, 1979; revised August 25, 1980)

Paraffin wax, from National Refinery Ltd., Karachi, has been oxidised with air and the fatty acids formed have been separated and analysed. GLC analysis shows the presence of both even and odd numbered fatty acids of carbon atoms from $C_{10} - C_{20}$.

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COMPARATIVE STUDIES OF SOLAR DEHYDRATORS

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Efficiency of various solar dehydrators for preservation of vegetables was studied. PCSIR model II, cot and UNICEF models produced better results than PCSIR model I and open sun drying.

Short Communication

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COMPARISON OF DISSOLUTION RATES OF DIFFERENT COMMERCIAL ASPIRIN TABLETS

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