

BOOK REVIEWS

Fundamentals of Optical Fibre Communications by Michael K. Barnoski 111 Fifth Avenue, New York, New York 10003, 1981 2nd Edn. pp. vii. 351, Price not given.

The twin areas of optical fiber technology and optical fiber applications have registered phenomenal growth during the past decade. Now, in application areas such as telecommunications the optical fiber cable is threatening the existence of conventional copper cable. In fact we now have in some parts of the world fully operational and almost commercially viable optical fiber based voice, data and video transmission systems. It appears to me that from the current trends in the use of light beams and optical systems for transmission, processing and storage of optical information, the word communications should be redefined to mean the integral discipline of Transmission, Processing and Storage (TPS) of information. And in all these three endeavours optical fibers have a very important role to play and hence a study of the fundamentals of optical fibers is a must for any student or researcher.

In a rapidly growing area of this type usually one comes across two kinds of books. One documents all the technological achievements in a given period and such a book becomes obsolete almost on the heels of its publication. Another is a book of the present type under review. Though this kind of a book also has a certain lifetime, it is bound to last for much longer time than the first kind because it concerns itself with concepts.

The nature of the area of Optical Fiber Telecommunications is such that even a book on the fundamentals, such as the present one entitled *Fundamentals of Optical Fiber Communications*, has to be updated periodically. It is heartening to see the second edition of the book exactly five years after its first appearance in 1976. Revolutionary strides have been made in the technology and applications of optical fibers during these five years. The fundamental concepts also have been refined during the past five years. The first edition of the book under review appeared at a very opportune time. Since then many books have appeared. However, I feel Barnoski's book will continue to attract the patronage of scientists and engineers engaged in optical communications precisely due to its tutorial nature.

The second edition is bulkier than the first one by almost over a hundred pages. The chapter organisation in this edition is much better because of the

provision of problems and references invariably under each chapter. There exist some irritations for the reader by way of the use of circular brackets to represent both references as well as equations. Also some of the sentences are imperfectly ended. For example on p 27 the sentence reads as follows: "... one can use the WKB method, which is well known from quantum mechanics Merzbacker (1.20)."

The getup of the book is most pleasing and hence kudos are due to the Academic Press Rapid Manuscript facility.

The book is definitely not a text book in the conventional sense and it is not purely a reference book either. In my evaluation it is a hybrid version of both, whereby the reader—whether he be a graduate student or a researcher—would have to sit long hours at his reading desk to assimilate the material presented in the book. The problems are well conceived also.

On the whole I believe the book on *Fundamentals of Optical Fiber Communications*, edited by M. K. Barnoski, should find a place in the bookshelves of both students as well as research workers.

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Science and the Factors of Inequality by Charles Moraze (Oxford & IBH Publishing Co., 17 Park Street, Calcutta 700 016) 1982, pp.273, Price Rs. 32.00.

Why is that, in modern times Science has developed to a great extent in certain Societies than in others? How does the Science exert an influence on Society and Economic development as a whole? Is Science inherent to certain cultures only? Analysis of facts can no doubt supply partial answers to these questions and many others. The policy makers in Science and technology may get better insight into the conditions under which Scientific and Technological knowledge has developed and which will enable them to perceive with more clarity the interactions between the Science and Society. The present publication is an outcome of UNESCO's effort in preparation of the United Nations Conference on Science and Technology for development. The main purpose of this book is to stimulate further Research on the way in which Science and Technology have contributed to the

development of Society. The book consists of 3 parts,—Part I deals with Expansion and Defusion of Modern Science, Part II deals with Impact of Science: Current views and Part III conclusions.

In Part I topics like Ontogenesis of Modern Science, Social Origin of Western Science and spread and Limitations of Modern Science in the Non-Western World have been covered. Part II briefly describes the Experiences of countries like China, Japan, India, Islamic World, Latin America and Africa.

An important chapter entitled "obstacles to Scientific Equality" has enhanced the value of this publication. Three sets of obstacles are closely correlated. The concluding chapter entitled "Science and the Unknown" is also equally interesting and thought provoking. An extensive reading of this publication leads one to the feeling that the new knowledge and know-how have served the privileged of this World to the detriment of the rest. Many aspects of Scientific progress and its impact on development have been high lighted through out this book. This publication will be of considerable interest and value to all those who are participating and are concerned with the Process of Social development using Science and Scientific Research as a tool. Students, Scientists, Engineers and Technologists Specially interested in the field of Management of Science and Technology will find this publication not only interesting in reading but also rewarding.

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Technical Handbook for the Paddy Rice post-harvest industry in developing countries — By James E. Wimberly (International Rice Research Institute, Los Banos, Laguna, Phillippines, P.O. Box 933, Manila, Phillippines) pp. 110 Price: not mentioned.

The Handbook of Paddy Rice Postharvest Industry in developing countries by James E. Wimberly is one of the most useful and timely publications of International Rice Research Institute. The research results in paddy post-harvest technology are lying scattered in various publications and Wimberly has done a great service to post-graduate teachers, Research Workers, Design Engineers and Manufacturers by bringing together in one small and elegant book all the relevant data pertaining to post-harvest technology industry keeping in mind the needs of developing countries.

This book successfully fills the gap between known technology and what is available for potential user.

Losses in post-harvest handling of paddy is estimated to vary from 7% to 26% depending upon various associated factors. In a country like India the loss may be 10% on an average which is itself truly colossal amounting to about 5 million tonnes of rice. Even if the 50% of this loss could be prevented by applying the principles enunciated in the book, the resulting saving accruing to the country would be of the order of 2.5 million tonnes which amount is higher than the total production of some states in India.

The author discusses each of the post-harvest steps like cleaning, drying, conveying, storage, parboiling and milling in great detail. For example under chapter 4 on conditions for safe storage, control of rodents, birds, insects and micro-organisms are dealt with in relation to relative humidity-moisture content equilibrium; bag and bulk storage are also discussed.

The chapter on par boiling is most relevant to Indian conditions, especially for north eastern India where almost all the paddy produced is par boiled. A useful chapter on testing of equipment for sampling, moisture measurement, dryer etc and laboratory lay out are given with suitable examples.

In chapter 8, the author commends the use of systems approach in dealing with post-harvest problems from identifying needs through to investment and operation costs.

The value of the book is greatly enhanced by the addition of 9 excellent appendices on pressure drop for different grain depths at 4 air flow rates, Chart for estimating weight loss when drying paddy, conversion data for drying etc. There is also a glossary of technical terms and an index.

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'Svagatam'
97. V. Street
Madras 600 004.

"Manual for Testing Insecticides on Rice" by E. A. Heinrichs, S. Chelliah, S. L. Valencia, M. B. Arceo, L. T. Fabellar, G. B. Aquino and S. Pickin, (International Rice Research Institute, Philippines. pp. 134, Price not given.

Insecticides will continue to be a vital component of the new pest control technology which aims at pest management by simple, cheap, effective and safe

methods. The entomologists in different countries therefore, will be required to identify effective insecticides, critical time of application and correct dosages and application methods for economical pest control. To obtain these items of information which are practiced in various countries, standard evaluation techniques are the need of the day. This manual provides the desired information to the entomologists, working in different countries in the rice production programme.

The manual presents techniques for evaluating insecticides in the laboratory, insectary and the field, and also the methodology to be used in the laboratory and insectary to determine the resistance of insects to insecticides. The methodology for field experiments to determine the activity of insecticides using various methods, has been given. The illustrations and tables, the appendix giving list of supplies and equipments and names of some suppliers, reference tables for determining insecticide rates and conversion tables

appended to the manual add to the utility of the manual.

The entire information is presented under nine chapters namely Planning insecticide evaluation studies, Rearing of test insects, Determining LD₅₀ values of insecticides, Insectary evaluation of insecticides, Field evaluation of insecticides, Physical assessment of spraying systems, Sampling insect populations and estimating insect damage in field experiments, Statistical analysis of insect populations and Plant damage and Data reporting and making insect control recommendations.

The manual will be highly useful to the users of the insecticides in the rice production — the researchers and the extension scientists involved in the rice production in different countries.

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ANNOUNCEMENT

INTERNATIONAL CONFERENCE ON "NATURE CONSERVATION" TO BE HELD, SEPTEMBER 20-25, 1984 AT AGRA, INDIA.

The Council of Natural Science of Agra (India) is inviting original research papers for the oral presentation and the poster session of the 5 days conference, which is to be held in the City of Taj at Agra, India. Any information regarding the Conference can be asked from the Secretary of the Council.

The main topics of the conference will be from any field related to natural sciences and environment (inter disciplinary) dealing with air, water, marine pollution problems, soil conservation and wild life etc.

The official language of the conference and for the preparation of the abstracts will be acceptable only in English. The last date to send the abstracts of the paper (not more than 200 words) is 1 January 1984 and should be addressed to:

Dr. K. S. Rana, Secretary, Council of Natural Sciences, Raja Surajmal Campus, Raja Mandi, Agra-282 002 or Dr. B. K. Puri, Chemistry Department, Indian Institute of Technology, New Delhi-110 016.