PREFACE

Various improvements in the conservation of solar heat energy in Salt Works have been studied. A modified system of series feeding to the crystallizers, resulting in 5 per cent increase in evaporation has been worked out. The mechanism of increase in the rate of evaporation by addition of minute quantity of manganese has been described. Also, method has been worked out to completely check the dissipation of heat from the crystallizer beds which has been calculated on average to be 7 - 9 per cent, by the process of lining the crystallizer bed with polythene film, for the first time.

Conditions to manufacture high purity salt in solar salt works for such specific uses as for dairy, table and canning industry have been worked out, for the first time. Similarly, conditions for the fortification of crystalline common salt with calcium, manganese, iron, phosphate and iodine separately or together by natural evaporation of sea brine in the solar salt works, has been worked out, for the first time. The process is simple and does not involve additional cost for fortified salt except for the cost of 'nutrients' added.

Washing of common salt in the crystallizers with fresh saturated brine to obtain industrial grade salt of 98.5 per cent purity has been developed in all details, for the first time.

Studies have been made on 'Solar Pond' in laboratory and the design of the 'Solar Pond' of the size 154 x 70 ft.
has been prepared for large scale experimentation. The
stability of the pond with various systems has been studied.
Based on the studies made and other considerations,
design parameters in the preparation of layout of solar
salt works on scientific basis have been described.

The sources of information have been mentioned at
their proper places in the thesis and have been listed in
bibliography.

The results and discussions are entirely original and
are based on the research carried out by me as presented
in the thesis.

No publication of mine forms an integral part of this
thesis for Ph.D. degree.

I wish to gratefully acknowledge my immense indebtedness
to Dr. P.S. Datar, Director of this Institute for suggesting
the problem and for his keen interest and guidance during the
course of this investigation.

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Signature of research guide

(D.S. Datar)