Mahmuda Begum

# Structure Factor of Interacting Bosons

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For the last few years, derivation of the energy excitation spectrum and structure factor for a system of interacting bosons has been a matter of rigorous theoretical studies. Although several workers have tried to develop a finite temperature theory for the temperature variation of the sound velocity and of the structure factor and calculated structure factor using soft potentials. The very fact that they used a soft potentials makes the calculations rather unrealistic is so far as the nature of liquid helium is concerned which is remain liquid even at absolute zero under normal pressure. Following further works in this direction and accepting the general derivation of the theory as given by Isihara, I propose to recast theory of Isihara, taking into account the effect of multiple scattering and also by using a potential having a hard core.In this book, I propose to raplace the Fourier transform of the interacting potential in the theory of Isihara by a t-matrix and use of two types of potentials having a hard core repulsive core.

Dr. Mahmuda Begum has Doctorate Degree in Physics from Tezpur University, India. Presently she is working as Assistant Professor in the Department of Physics, Lakhimpur Girls' College, Assam, India. She has a number of publications in international Journals to her credit. Her current area of research include Dusty Plasma Physics, Liquid Helium etc.

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This Research Book is dedicated

***TO MY FATHER***

*for raising me to believe that anything was possible*

*and*

***TO MY HUSBAND***

*for making everything possible*

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