

**THEORETICAL STUDIES ON HYDROGEN BONDING AND HALOGEN BONDING  
INTERACTIONS AND THEIR EFFECTS ON STRUCTURE AND VIBRATIONAL  
PROPERTIES OF MOLECULES**

**A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT  
FOR THE DEGREE OF**

**DOCTOR OF PHILOSOPHY**

**IN**

**CHEMISTRY**

**BY**

**DIPANKAR SUTRADHAR**

**CENTRE FOR ADVANCED STUDIES IN CHEMISTRY**

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**NORTH-EASTERN HILL UNIVERSITY**

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