The following papers contain the work described in this thesis:

1. Cholesterol-induced modulated phase in phospholipid membranes,
   Sanat Karmakar and V. A. Raghunathan,

2. Phase behaviour of dipalmitoyl phosphatidylcholine (DPPC)–cholesterol membranes,
   Sanat Karmakar, V. A. Raghunathan, and Satyajit Mayor,

3. Structure of phospholipid–cholesterol membranes: an x-ray diffraction study,
   Sanat Karmakar and V. A. Raghunathan
   (to appear in *Phys. Rev. E*).

4. Observation of fluid–fluid immiscibility in ternary mixtures of dipalmitoyl phos-
   phatidylcholine (DPPC), dioleoyl phosphatidylcholine (DOPC) and cholesterol,
   Sanat Karmakar, V. A. Raghunathan, and Satyajit Mayor
   (to be submitted).