SCOPE FOR FURTHER WORK

While the efforts made by author described in chapters 2 to 7 have met with success to a considerable extent, there are still few aspects which deserve further investigations.

By employing sophisticated methods like Magnetron sputtering or Electron beam for deposition, films of better quality can be grown due to reduced interaction of depositing vapours with residual gases.

The gas sensors made of ITO films sense many polluting gases like CO, CO₂, H₂S, CCl₄, auto exhaust etc. This shows a change in conductivity in the presence of gases thereby triggering electronics alarm systems. It may be possible to make ITO thin film gas sensors more selective by doping with suitable dopants or additives. It will be worth investigating in this area.

Because of non-availability of expensive equipments like gas analyzer and monitors in our laboratory, the concentration of components in auto exhaust gases could not be obtained.

There are several types of sophisticated and costly
analyzing instruments based on coulometric titration or fluorescence for instant\textsuperscript{a} to detect $H_2S$ gas concentration. Since these instruments are not available in our laboratory the concentration of $H_2S$ in the ppm level could not be obtained.

To study the effect of surface area and grain size of the sensor material on the performance of gas sensor and the chemistry responsible for observed behaviour appear to be new thrust area of investigations in this field.

ITO-IO thin film thermocouple shows good potential as an active device for temperature measurements, but it requires further investigation for improvement in its thermoelectric property. Thermocouples deposited on alumina substrates may be useful for the measurement of high temperature.

Research on these aspects is hoped to have added to existing knowledge of this most fascinating branch of materials science namely "Semiconducter Thin Film Devices".