technique. In the above study four coatings were made in which two coatings were coating by the Magnesium oxide and Aluminium Oxide mixture with addition of Polyethylene glycol (PEG). Other two coatings were made without the addition of PEG. Also the films were deposited at two different dip timing. Figure 8 displays the SEM images, showing the molecular structure of the film with PEG. The polymer chain can be clearly seen in the figure. Figure 11 shows the SEM image of the sample without PEG in which MgO molecules are adhered over Al_2O_3 molecules. This effect may be attributed to the addition of PEG. Figure 17 shows the four probe test results of the samples. It can infer that the coating with PEG shows good conductivity results. Also the coatings dipped for 12 hours shows great deviations in conductivity when compared to the coatings which are dipped for 6 hours in the same solution. Table 1 shows the gas sensing test results of the prepared samples. In this test it can be inferred that samples without PEG shows better output voltage for the same input voltage than that of the sample with PEG.

6. Conclusion

From the above discussions it can be inferred that the samples with different compositions and different coating time shows extremely different results .In the analysis side, four probe test result shows the conductivity variation for samples with PEG and without PEG. Also the samples coated for 6 and 12 hours shows variations in change in conductivity. Scanning Electron Microscopy results shows that the polymer chain is formed due addition of PEG and sample without PEG shows even grain structure. The Magnesium Oxide molecules are adhered over Aluminium Oxide molecules. Finally Gas sensing test shows the change in conductivity for exposure of hydrogen gas.

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