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ORIGINAL ARTICLE

DIRECTING POLYMER AND MOISTURE NANO SENSOR

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ABSTRACT:

Film casting techniques were used to keep polymorphisms (PPY), polylniline (Pani-EB) for chemical and Moisture sensing, and their mixing film to keep aluminum electrodes and clean glass plates. Pure aluminum (A1) was destroyed in the $2.5x10^{-3}$ vacuum of tungsten filament. PPY, Pani-EB and their mixing films were measured according to the thickness and weight pattern. The change in frequency with capacitance is used to interpret acetone and ammonia gas. Changes in immunity with Moisture percentage were measured in the presence of Moisture control chemical $CaCl_2.2H_2O$. Measurement of Moisture (made in Germany) was used to measure sample percentage.

KEYWORDS : electrical properties , study of polymeric (PPY), electrical capacitors.

INTRODUCTION:

The study of polymeric (PPY), polyline (Pani-EB) and their mixing polymers are interesting due to their high conductivity and stability. Polyoprotol has been widely examined since environmental sustainability and readiness are readily available. The electrical properties of polyunsylan can be reversed by changing the main chain's oxidation phase and proponation of the ine nitrogen atom. When mixed with the polymeric, the electrical properties of the polumers are improved. Shows steady conductivity and improved accessibility to PPY and Pani-EB mixes. An easy way to find gas is by adjusting the electrical capacitors or / and immune systems induced by the facility of gas molecules on the surface of the organic semiconductor. Many scientists have tried Moisture sensors for many molecules and water vapor measurement to study the sensing of ammonia. In the current study, an attempt has been made to study the mixture of ammonia gas in PPY, Pani-EB and their thin film form. Work has also been expanded by polymerolol to sensitize acetone andMoisture controlled chemical $CaC1_22H_2O$.

EXPERIMENTAL:

To build pure aluminum (al) at the bottom and the top electrode which was evaporation in a vacuum 2.5x10-3 Pa from a tungsten formation? The PPY film was kept clean from the solution of PPY dissolved in the NPP solvent to complete the Al-PPY-AL construction to sensitize chemical gases and al-PPY structures for sample sensingpolyaniline structure, acid doped, polynylin and polyaniline are shown in Figure 1. Substratum Films accumulate on a substrate directly or through chemical and electrical chemical processes directly through direct control of the control of individual molecules or Ionic species. Ionic species of specific atomic molecules or substances can be present in vapor or liquid state.

Thickness was measured by gravitational and capacitance. Pie, acid water and PPI film's resistance and capacitation were calculated using Hewlett Packard Digital LCR-Meter. Hygrometer used for measuring Moisture was used. The schematic design of chemical sensor and Moisture sensor is given in Figures.

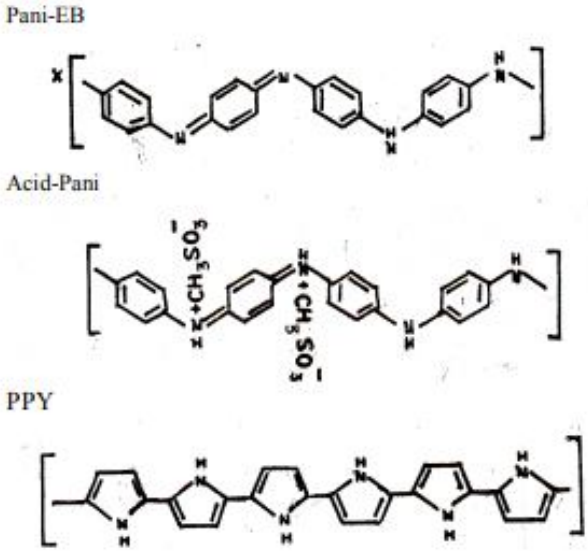
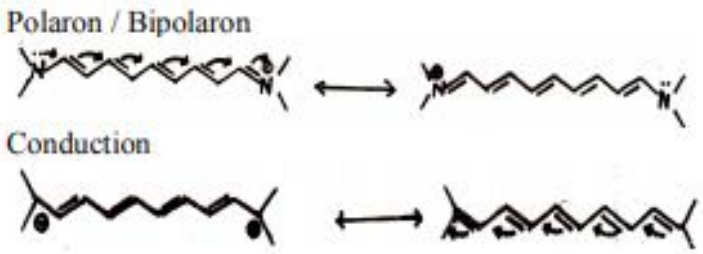


Figure 1: Structure of Pani-EB, Acid Pani and PPY Conducting Ploymers and Conduction Mechanism.



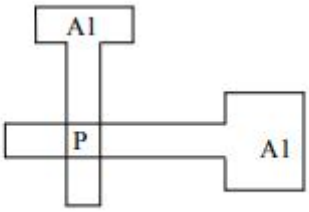


Figure-3 Al – Aluminium P – Polypyrrole

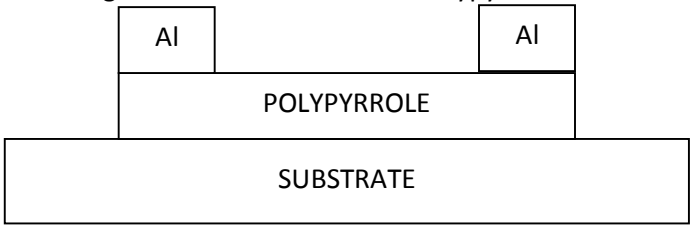


Figure – 3 Moisture Sensor Al-Aluminium

RESULT AND DISCUSSION:

Figure 4 shows the difference between the capacitance with the log frequency for the PPY movie. The capacitance variation is based on any gas before facing film in any gas in Figure 1 of curve. Curve 2 shows that the film's ammonia environment and the reading taken in curve 3 show the value after removing the ammonia environment. It seems that the film's capacitance. Figure 4 shows the differences of the capacitance with the log frequency for the PPY movie. The capacitance variation is based on any gas before facing film in any gas in Figure 1 of curve. Curve 2 shows that the film's ammonia environment and the reading taken in curve 3 show the value after removing the ammonia environment. It appears that when the eruption of ammonia gas occurs, the film capacitance suddenly increases. Capacitance values in 10 kHz vary from 27 to 65 NF. After opening the sample regarding the environment, the sample returns almost its original capitation value. The Pani-EB film did not regain the original capacitance valve after the change in atmospheric pressure from 0.88 PF to 160 PF for Pani AEB film (Fig. 5), the cost of capacitance. The API-Pani-Abby Mixture film (Fig.6) has a large increase in the capacitance value in contact with ammonia gas. The value of the capacitance varies from 2.7 pf to 780 pf. Like the Paniab film, the PPI-water-EB mix does not return its initial capacity value after removing the ammonia environments. This behaviour shows the effect on Pipi-EB PPY. Changing capacitance has resulted in a change in carrier concentration due to the donor-acceptant governance caused by gasses sources. Generally, if electrons have gas channels like ammonia, if loaded, it helps in reducing carrier density.

Figure 7 shows capacitance vs. logf plot for PPI film outside Acetone. Film capacitance suddenly increases when gas is exposed to acetone gas in low frequency range. Capacitance value in 10 kHz varies from 35 to 180 NF. After opening the sample in the atmosphere, the sample gets its original capitalized value. Finish change due to change in carrier concentration by donors - Switcher states arising from GasySystems In Figure 8 it has been found that $CaC1_22H_2O$ when using chemical pollution to control Moisture.

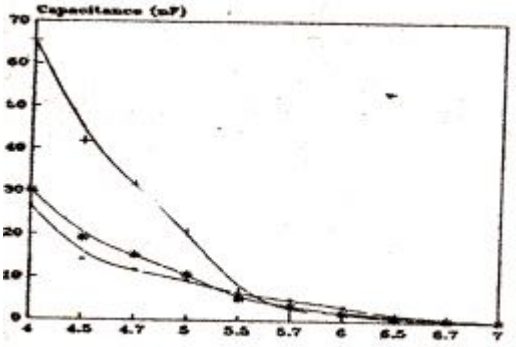


Figure 4 Capacity Vs. Log F for PPY Film Exposed to Ammonia Gas

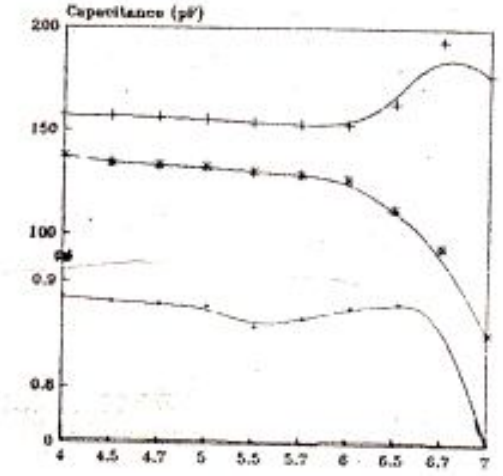


Figure 5 Capacitance vs. Log F for Pani PB film exposed to ammonia gas

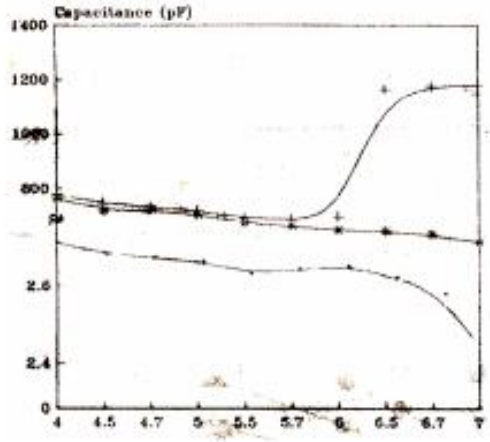


Figure-6 Capacitance vs Log f for PPY/Pani EB film exposed to ammonia gas

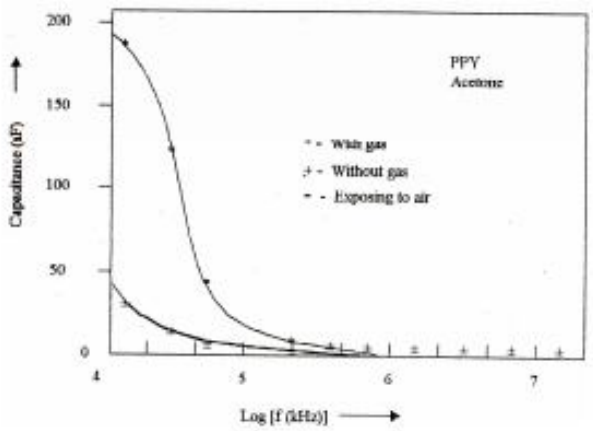


Figure -7 Capacity vs. Log for PPY Film

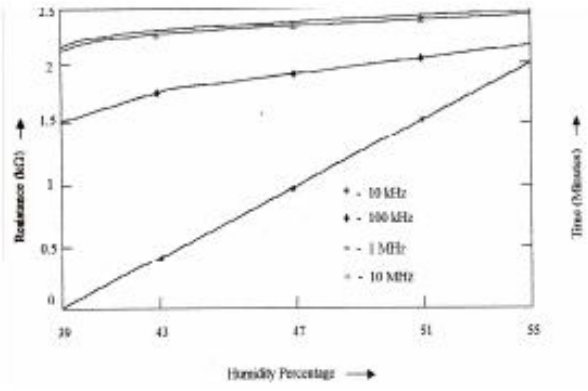


Figure-8 Moisture vs. Resistivity and Time

CONCLUSION:

It concluded that the polymerase, polyaniline EB and their mix have a good response to ammonia gas. Polyline-EB and polyiferal-polyurium-AB mixed values do not return the original values, whereas polypireol may return its original value when it comes to atmospheric conditions, so that PPY can act as a good unfamiliar ammonia gas sensor, whereas polyvinylly-EB and polypheirol-polylene -Eb mixed film can be used as a disposable ammonia sensor.

REFERENCES:

1. Suresh C. Jain, Magnus willander, VikramKumar (2007), 'Conducting Organic materialsand Devices', Acadamic press London.
2. Sakthivel S., and Mangalaraj D. (2010), 'Conducting Ploymer Chemical and Humidity Nano Sector', Journal of Chemistry and Chemical Science Vol.-1, Issue-1, pp. 29-32.
3. Kabir L., Mandal A.R., and Mandal S.K. (2008), 'Humidity-sensing properties of conducting polypyrrole-silvernanocomposites', Journal of Experimental Nano science, Vol-3, Issue-4, pp. 297-305.
4. R.L. Elsenbaumer and J.R. Reynolds, in Handbook of Conducting Polymers, Vol. 1–2,T.A. Skotheim, ed., Marcel Dekker, New York, 1997.
5. K.M. Takahashi and T.M. Sullivan, AC impedance measurement of environmental water in adhesive interfaces, J. Appl. Phys. 66 (1989), pp. 3192–3201.