4. Conclusions

The addition of iron oxide to Nylon 6/Teflon matrix doubles the tensile strength and the hardness while it reduces the ductility of the Nylon/Teflon polymer composites. There is the occurrence of agglomeration of iron oxide particles owing to high surface energy. The flow lines have been observed in the Nylon 6/Teflon/Iron oxide on account injection molding process.

5. Acknowledgements

The author acknowledges with thanks University Grants Commission (UGC) – New Delhi for sectioning R&D project.

References

[1] Q. H. Wang, Q. J. Xue, W. M. Liu and J. M. Chen, "The Friction and Wear characteristics of Nanometer SiC and Polytetrafluoroethylene Filled Polyetheretherketone," Wear, vol. 243, no. 1-2, pp. 140-146, 2000.
[2] J.K.Lancaster, Polymer-based bearing materials, the role of fillers and fiber Reinforcement, Tribology vol. 5, no.6, pp.249-55, 1972.
[3] F. Li, K. Hu and J. Li, "The Friction and Wear Characteristics of Nanometer ZnO Filled Polytetrafluoroethylene," Wear, vol. 249, no. 10-11, pp. 877-882, 2002.
[4] W. Sawyer, K. Freudenberg, P. Bhimaraj and L. Schadler, "A Study on the Friction and Wear Behavior of PTFE Filled with Alumina Nanoparticles," Wear vol. 254, no. 5- 6, pp. 573-580, 2003.
[5] J. Bijwe, J. J. Rajesh A. Jeyakumar, A. Ghosh and U. S. Tewari, "Influence of Solid Lubricants and Fiber Reinforcement on Wear Behavior of Polyethersulphone," Tribology International, vol. 33, no. 10, pp. 697-706, , 2000.
[6] Q. H. Wang, Q. J. Xue and W. C. Shen, "The Friction and Wear Properties of Nanometer SiO_2 Filled Polyetheretherketone," Tribology International, vol. 30, no. 3, pp.193-197, 1997.
[7] M. H. Cho and S. Bahadur, "Study of the Tribological Synergistic Effects in CuO-Filled and Fiber-Reinforced Polyphenylenesulfide Composites," Wear, vol. 258, no. 5-6, pp. 835-845, 2004.
[8] A. Chennakesava Reddy, "Characterization of Mechanical and Tribological Behavior of (Nylon 6 + Graphite + Teflon) Nano Particulate Composite: Application Perspective," International Journal of Scientific & Engineering Research, vol.6, no.4, pp. 378-386, 2015.
[9] B. Kotiveerachari, A. Chennakesava Reddy, Interfacial effect on the fracture mechanism in GFRP composites, CEMILAC Conference, Ministry of Defence, India, 20-21st August, B85-87, 1999.
[10] B. Pukansky, J. Kolarik and F. Lednicky, "Polymer Composites," Proceedings of the 28th Microsymposium on Macromolecules, Prague, Czechoslovakia, vol.67, pp.553, 1985.
[11] H.P. Schreiber and F. St. Germain , "in Acid-Base Interactions: Relevance to Adhesion Science and Technology," Eds., K.L. Mittal and H.R. Anderson, Jr., VSP, Utrecht, The Netherlands, 1991, 273.
[12] S.J. Porter, C.L. DeArmitt, R. Robinson, J.P. Kirby and D.C. Bott, "The Surface Characterization of Polyacrylonitrile-based Carbon fibers by Electrochemical Techniques," High Performance Polymers, vol. 1, no.1, pp.85-93, 1989.