

## REFERENCES

- Agag, T., and Takeichi, T. (2007) High-Molecular-Weight AB-Type Benzoxazines as New Precursors for High-Performance Thermosets. Journal of polymer science. Part A. Polymer chemistry, 45, 1878-1888.
- Burke, A. (2000) Ultracapacitors: why, how and where is the technology. Journal of the Power Sources, 91, 37-50.
- Burke, W.J. (1949) 3,4-dihydro-1,3,2H-benzoxazines. reaction of p-substituted phenols with N,N-dimethylolamines. Journal of the American Chemical Society, 71, 609-12.
- Burke, W.J., Bishop, J.L., Glennie, E.L.M., and Bauer, W.N. (1965) A new aminoalkylation reaction condensation of phenols with dihydro-1,3-oxazines. Journal of Organic Chemistry, 30, 3423-3427.
- Conway BE. (1999) Electrochemical supercapacitors – scientific fundamentals and technological applications. New York: Kluwer Academic/Plenum.
- Frackowiak, E., and Be'guin, F. (2006) Review Carbon materials for the electrochemical storage of energy in capacitors. Carbon, 39, 937-950.
- Gârea, S.A., Iovu, H., Nicolescu, A., and Deleanu, C. (2007) Thermal polymerization of benzoxazine monomers followed by GPC, FTIR and DETA. Polymer Testing, 26, 162-171.
- Hall, P.J., and Bain, E. J. (2008) Energy-storage technologies and electricity generation. Energy Policy, 36, 4352-4355.
- Holly, F.W., and Cope, A.C. (1944) Condensation products of aldehydes and ketones with o-aminobenzyl alcohol and o-hydroxybenzylamine. Journal of the American Chemical Society, 66, 1875-1879.
- Hwang, S.W. and Hyun, S.H. (2004) Capacitance control of carbon aerogel electrodes. Journal of Non-Crystalline Solids, 347, 238-245.
- Hwang, S.W. and Hyun, S.H. (2007) Synthesis and characterization of tin oxide/carbon aerogel composite electrodes for electrochemical super capacitors. Journal of the Power Sources, 172, 451-459.
- Ishida, H. U.S. Patent 5 543 516.

- Ishida, H., and Allen, D. (1996) Physical and mechanical characterization of near-zero shrinkage polybenzoxazines. Journal of Polymer Science Part B, 34(6), 1019–1030.
- Ishida H, Rodriguez Y. (1995) Curing kinetics of new benzoxazine-based phenolic resin by DSC. Polymer, 36:3151–8.
- Kim, S.J., Hwang, S.W., and Hyun, S.H. (2005) Preparation of carbon aerogel electrodes for supercapacitor and their electrochemical characteristics. Journal of Materials Science, 40, 725-731.
- Li, J., Wang, X., Wang, Y., Hang, Q., Chunling, D., Gamboa, S., and Sebastian, P.J. (2006) Studies on preparation and performances of carbon aerogel electrodes for the application of supercapacitor. Journal of the Power Sources, 158, 784-788.
- Li, J., Wang, X., Wang, Y., Hang, Q., Chunling, D., Gamboa, S., and Sebastian, P.J. (2008) Structure and electrochemical properties of carbon aerogels synthesized at ambient temperatures as supercapacitors. Journal of Non-Crystalline Solids, 354, 19-24.
- Li, W.C., Lu, A.H., and Guo, S.C. (2001) Characterization of the microstructures of organic and carbon aerogels based upon mixed cresol–formaldehyde. Carbon, 39, 1989-1994.
- Ning, X., and Ishida, H. (1994) Phenolic materials via ring-opening polymerization-synthesis and characterization of bisphenol-a based benzoxazines and their polymers. Journal of Polymer Science Part A:Polymer Chemistry, 32, 1121–1129.
- Oberja, V.V.N. (2008) On the performance of supercapacitors with electrodes based on carbon nanotubes and carbon activated material—A review. Physica E, 40, 2596-2605.
- Pandolfo, A.G. and Hollenkamp, A.F. (2006) Carbon properties and their role in supercapacitors. Journal of the Power Sources, 157, 11-27.
- Pekala, R.W. (1989) Organic aerogels from the polycondensation of resorcinol with formaldehyde. Journal of Materials Science, 24, 3221–3227.

- Riess, G., Schwob, M., Guth, G., Roche, M., and Lande, B. (1985) Advances in polymer synthesis. New York: Plenum.
- Takeichi, T., and Agag T. (2006) High performance Poly benzoxazine as Novel Thermosets. High Performance Polymers, 18, 777-797.
- Takeichi, T., Kano, T., and Agag, T. (2005) Synthesis and thermal cure of high molecular weight polybenzoxazine precursors and the properties of the thermosets. Polymer, 46, 12172–12180.
- Tamon, H., Ishizaka, H., Yamamoto, T., and Suzuki, T. (1999) Preparation of mesoporous carbon by freeze drying. Carbon, 37, 2049-2055.
- Tarek Agag, Tsutomu Takeichi. (2006) High-Molecular-Weight AB-Type Benzoxazines as New Precursors for High-Performance Thermosets. Wiley InterScience.
- Wei, Y.Z., Fang, B., Iwasa, S., and Kumagai, M. (2001) A novel electrode material for electric double-layer capacitors. Journal of the Power Sources, 141, 386-391.
- Wu, D., and Fu, R. (2005) Fabrication and Physical Properties of Organic and Carbon Aerogel Derived from Phenol and Furfural. Journal of porous materials, 12, 311-316.
- Zhang, R., Lu, Y., Zhan, L., Liang, L., Wu, G., and Ling, L. (2002) Monolithic carbon aerogels from sol-gel polymerization of phenolic resoles and methylolated melamine. Carbon, 411, 1645-1687.
- [http://unit.aist.go.jp/energy/outline/theme02\\_e.html](http://unit.aist.go.jp/energy/outline/theme02_e.html)
- [http://www.chemistry.nmsu.edu/studntres/\\_chem\\_435/Lab14/double\\_layer.html](http://www.chemistry.nmsu.edu/studntres/_chem_435/Lab14/double_layer.html)
- [http://www.ep2.physik.uni-wuerzburg.de/ag\\_fricke/textonly/supercaps\\_index.html](http://www.ep2.physik.uni-wuerzburg.de/ag_fricke/textonly/supercaps_index.html)
- <http://www.rise.org.au/info/Tech/scap/index.html>

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1. Katanyoota, P.; Chaisuwan, T.; and Wongkasemjit, S. (2009, March 22-26) Novel Polybenzoxazine-based Carbon Aerogel Electrode for Supercapacitors. Proceeding of the 237<sup>th</sup> ACS National Meeting & Exposition, Salt Lake City, UT, USA.
2. Katanyoota, P.; Chaisuwan, T.; and Wongkasemjit, S. (2009, April 22) Novel Polybenzoxazine-based Carbon Aerogel Electrode for Supercapacitors. Proceeding of the 15<sup>th</sup> PPC Symposium on Petroleum, Petrochemicals and Polymers, Bangkok, Thailand.

**Presentations:**

1. Katanyoota, P.; Chaisuwan, T.; and Wongkasemjit, S. (2009, March 22-26) Novel Polybenzoxazine-based Carbon Aerogel Electrode for Supercapacitors. Paper presented at 237<sup>th</sup> ACS National Meeting & Exposition, Salt Lake City, UT, USA.
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