

REFERENCES

- Ain, Z., & Azura, A. (2011). Effect of different types of filler and filler loadings on the properties of carboxylated acrylonitrile–butadiene rubber latex films. *Journal of Applied Polymer Science*, 119(5), 2815-2823.
- Al-Oweini, R., & El-Rassy, H. (2009). Synthesis and characterization by FTIR spectroscopy of silica aerogels prepared using several Si (OR)₄ and R'' Si (OR')₃ precursors. *Journal of Molecular Structure*, 919(1), 140-145.
- Alexandre, M., & Dubois, P. (2000). Polymer-layered silicate nanocomposites: preparation, properties and uses of a new class of materials. *Materials Science and Engineering: R: Reports*, 28(1-2), 1-63.
- Andrianov, K. m. A. (1955). Organic silicon compounds (Vol. 1): State Scientific technical Pub. House for Chemical Literature, 101-106.
- Baes, C. F., & Mesmer, R. E. (1976). The Hydrolysis of Cations (Vol. 489).
- Bhowmik, S., Islam, J. M., Debnath, T., Miah, M. Y., Bhattacharjee, S., & Khan, M. A. (2017). Reinforcement of Gelatin-Based Nanofilled Polymer Biocomposite by Crystalline Cellulose from Cotton for Advanced Wound Dressing Applications. *Polymers*, 9(6), 222.
- Blackley, D. (1997). Polymer Latices Science and Technology, Vol. 2 'Types of Latices', 445 et seq. In: Chapman & Hall 2. Unpublished data.
- Bogush, G., Tracy, M., & Zukoski, C. (1988). Preparation of monodisperse silica particles: control of size and mass fraction. *Journal of non-crystalline solids*, 104(1), 95-106.
- Bogush, G., & Zukoski, C. (1991). Studies of the kinetics of the precipitation of uniform silica particles through the hydrolysis and condensation of silicon alkoxides. *Journal of Colloid and Interface Science*, 142(1), 1-18.
- Bokobza, L. (2004). The reinforcement of elastomeric networks by fillers. *Macromolecular Materials and Engineering*, 289(7), 607-621.
- Brinker, C. (1988). Hydrolysis and condensation of silicates: effects on structure. *Journal of non-crystalline solids*, 100(1-3), 31-50.
- Brinker, C. J. (1990). GW Scherer Sol-Gel Science. *The Physics and Chemistry of Sol-Gel Processing*, Academic, San Diego, CA, (21-228).

- Brinker, C. J. (1994). Sol-gel processing of silica (No. CONF-900802-). American Chemical Society, Washington, DC (United States).
- Brinker, C. J., & Scherer, G. W. (2013). *Sol-gel science: the physics and chemistry of sol-gel processing*: Academic press.
- Chakraborty, S., Bandyopadhyay, S., Ameta, R., Mukhopadhyay, R., & Deuri, A. (2007). Application of FTIR in characterization of acrylonitrile-butadiene rubber (nitrile rubber). *Polymer testing*, 26(1), 38-41.
- Ciolacu, D., Ciolacu, F., & Popa, V. I. (2011). Amorphous cellulose-structure and characterization. *Cellulose Chemistry and Technology*, 45(1), 13.
- Ciprari, D., Jacob, K., & Tannenbaum, R. (2006). Characterization of polymer nanocomposite interphase and its impact on mechanical properties. *Macromolecules*, 39(19), 6565-6573.
- Das, D., Parida, K., & Mishra, B. (2009). Synthesis and surface properties of silica spheres with core shell structure by one convenient method. *Advances in Materials Science and Engineering*, 2009.
- Erdemir, D., Lee, A. Y., & Myerson, A. S. (2009). Nucleation of crystals from solution: classical and two-step models. *Accounts of Chemical Research*, 42(5), 621-629.
- Evans, M. S. (2002). Tyre compounding for improved performance (Vol. 12): iSmithers Rapra Publishing, 68-72.
- Flory, P. J. (1950). Statistical mechanics of swelling of network structures. *The Journal of Chemical Physics*, 18(1), 108-111.
- Freundlich, H., & Hatfield, H. S. (1926). Colloid and capillary chemistry: Methuen And Co. Ltd; London, 53-61.
- Gojny, F., Wichmann, M., Köpke, U., Fiedler, B., & Schulte, K. (2004). Carbon nanotube-reinforced epoxy-composites: enhanced stiffness and fracture toughness at low nanotube content. *Composites Science and Technology*, 64(15), 2363-2371.
- Green, D., Lin, J., Lam, Y.-F., Hu, M.-C., Schaefer, D. W., & Harris, M. (2003). Size, volume fraction, and nucleation of Stober silica nanoparticles. *Journal of Colloid and Interface Science*, 266(2), 346-358.

- Iler, K. R. (1979). The chemistry of silica. Solubility, Polymerization, Colloid and Surface Properties and Biochemistry of Silica, (43-78).
- Jarnthong, M., Peng, Z., Nakason, C., & Lopattananon, N. (2010). Surface modification of silica nanoparticles for reinforcement of epoxidized natural rubber. In *Advanced Materials Research* (Vol. 93, pp. 370-376). Trans Tech Publications.
- Jasso-Gastinel, C. F. (2017). Gradients in Homopolymers, Blends, and Copolymers. In *Modification of Polymer Properties* (pp. 185-210).
- Jing, S.-Y., Lee, H.-J., & Choi, C. K. (2002). Chemical bond structure on Si-OC composite films with a low dielectric constant deposited by using inductively coupled plasma chemical vapor deposition. *Journal of the Korean Physical Society*, *41*(5), 769-773.
- Koo, J. H. (2006). *Polymer nanocomposites*: McGraw-Hill Professional Pub, 79-93.
- Lim, H., Vivayganathan, K., & Amir-Hashim, M. (2012). Properties of Carboxylated Nitrile Latex Film with Varying Thickness. *Journal of Rubber Research*, *15*, 3.
- Lipatov, I. U. r. S., & Lipatov, Y. S. (1995). *Polymer reinforcement*: ChemTec Publishing (Vol. 1), 69-96.
- Luo, Y., Feng, C., Wang, Q., Yi, Z., Qiu, Q., Lx, K., & Peng, Z. (2013). Preparation and characterization of natural rubber/silica nanocomposites using rule of similarity in latex. *Journal of Wuhan University of Technology-Mater. Sci. Ed.*, *28*(5), 997-1002.
- Mahipal, Y. K., Agrawal, R. C., Hanisah, Y., Arshed, N., & Ramesh, S. (2016). Materials and Electrical Property Studies on Polymer Electrolyte Membranes Incorporating with Room Temperature Ionic Liquid. *Int. J. Emerg. Technol. Adv. Eng.*, *6*, 18-25.
- Malafaya, P. B., Silva, G. A., & Reis, R. L. (2007). Natural–origin polymers as carriers and scaffolds for biomolecules and cell delivery in tissue engineering applications. *Advanced drug delivery reviews*, *59*(4), 207-233.
- Matsoukas, T., & Gulari, E. (1988). Dynamics of growth of silica particles from ammonia-catalyzed hydrolysis of tetra-ethyl-orthosilicate. *Journal of Colloid and Interface Science*, *124*(1), 252-261.

- Matsoukas, T., & Gulari, E. (1989). Monomer-addition growth with a slow initiation step: a growth model for silica particles from alkoxides. *Journal of Colloid and Interface Science*, 132(1), 13-21.
- McNeil, K., DiCaprio, J., Walsh, D., & Pratt, R. (1980). Kinetics and mechanism of hydrolysis of a silicate triester, tris (2-methoxyethoxy) phenylsilane. *Journal of the American Chemical Society*, 102(6), 1859-1865.
- Mihara, S. (2009). Reactive processing of silica-reinforced tire rubber: new insight into the time-and temperature-dependence of silica rubber interaction, 52-78.
- Mujkanović, V. L., & Ostojić, G. (2009). NON-BLACK FILLERS FOR ELASTOMERS 13th International Research. In Expert Conference Tunisia (pp. 16-20).
- Nair, K. P., Nair, A. B., & Joseph, R. (2014). Carboxylated acrylo nitrile butadiene rubber latex/kaolin nanocomposites: preparation and properties. *Composite Interfaces*, 21(6), 571-583.
- Nair, K. P., Thomas, P., & Joseph, R. (2012). Latex stage blending of multiwalled carbon nanotube in carboxylated acrylonitrile butadiene rubber: mechanical and electrical properties. *Materials & Design*, 41, 23-30.
- Nguyen, T.-D. (2013). From formation mechanisms to synthetic methods toward shape-controlled oxide nanoparticles. *Nanoscale*, 5(20), 9455-9482.
- Nishinari, K., & Takahashi, R. (2003). Interaction in polysaccharide solutions and gels. *Current opinion in colloid & interface science*, 8(4), 396-400.
- Nozawa, K., Gailhanou, H., Raison, L., Panizza, P., Ushiki, H., Sellier, E., . . . Delville, M. (2005). Smart control of monodisperse Stöber silica particles: effect of reactant addition rate on growth process. *Langmuir*, 21(4), 1516-1523.
- Oliver, R. C., Lipfert, J., Fox, D. A., Lo, R. H., Doniach, S., & Columbus, L. (2013). Dependence of micelle size and shape on detergent alkyl chain length and head group. *PloS one*, 8(5), 62488.
- Ostwald, W. (1900). About the supposed isomerism of red and yellow mercuric oxide and the surface tension of solid bodies. *Zeitschrift für physikalische Chemie*, 34(1), 495-503.

- Patel, B., & Patel, P. (2014). Synthesis and characterization of silica nano-particles by acid leaching technique. *Research Journal of Chemical Sciences*, 4(5), 52-55.
- Paul, D., & Robeson, L. M. (2008). Polymer nanotechnology: nanocomposites. *Polymer*, 49(15), 3187-3204.
- Pavia, D. L., Lampman, G. M., Kriz, G. S., & Vyvyan, J. A. (2008). Introduction to spectroscopy. Cengage Learning, 108-199.
- Pontoni, D., Narayanan, T., & Rennie, A. (2002). Time-resolved SAXS study of nucleation and growth of silica colloids. *Langmuir*, 18(1), 56-59.
- Rafiee, E., Shahebrahimi, S., Feyzi, M., & Shaterzadeh, M. (2012). Optimization of synthesis and characterization of nanosilica produced from rice husk (a common waste material). *International Nano Letters*, 2(1), 29.
- Rallini, M., & Kenny, J. (2017). Nanofillers in Polymers. In *Modification of Polymer Properties* (pp. 47-86): Elsevier.
- Ramasinghe, R. L. P., Gannoruwa, G. K. B. M., & Liyanage, N. M. V. K. (2016, April). Use of surface modified silica in reinforcing carboxylated nitrile rubber latex. In Moratuwa Engineering Research Conference (MERCon), 2016 (pp. 361-366). IEEE.
- Rida, M. A., & Harb, F. (2014). Synthesis and characterization of amorphous silica nanoparticles from aqueous silicates using cationic surfactants. *Journal of Metals, Materials and Minerals*, 24(1).
- Rothon, R. N. (2002). Particulate fillers for polymers (Vol. 12): iSmithers Rapra Publishing. 49-110.
- Sadeghi, M., Dorodian, M., & Rezaei, M. (2013). Synthesis and Characteristic of Precipitated Nano-Silica. *Journal of Advances in Chemistry*, 6(1), 917-922.
- Sae-oui, P., Sirisinha, C., Thepsuwan, U., & Hatthapanit, K. (2006). Roles of silane coupling agents on properties of silica-filled polychloroprene. *European polymer journal*, 42(3), 479-486.
- Sala, R. L., Arantes, T. M., Longo, E., Leite, E. R., Paranhos, C. M., & Camargo, E. R. (2014). Evaluation of modified silica nanoparticles in carboxylated nitrile rubber nanocomposites. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 462, 45-51.

- Sarawade, P. B., Kim, J.-K., Hilonga, A., & Kim, H. T. (2010). Preparation of hydrophobic mesoporous silica powder with a high specific surface area by surface modification of a wet-gel slurry and spray-drying. *Powder Technology*, *197*(3), 288-294.
- Shimura, N., & Ogawa, M. (2007). Preparation of surfactant templated nanoporous silica spherical particles by the Stöber method. Effect of solvent composition on the particle size. *Journal of materials science*, *42*(14), 5299-5306.
- Skelhorn, D. (2003). Particulate fillers in elastomers. *Particulate-Filled Polymer Composites. 2nd ed. Shrewsbury, UK: Rapra Tec. Lim*, 324.
- Somararatne, M., Liyanage, N., & Walpalage, S. (2014). Surface modification of silica with a hydrophilic polymer and its influence on reinforcement of natural rubber latex. *Journal of the National Science Foundation of Sri Lanka*, *42*(4).
- Stanley, R., & Nesaraj, A. S. (2014). Effect of surfactants on the wet chemical synthesis of silica nanoparticles. *International Journal of Applied Science and Engineering*, *12*(1), 9-21.
- Stöber, W., Fink, A., & Bohn, E. (1968). Controlled growth of monodisperse silica spheres in the micron size range. *Journal of Colloid and Interface Science*, *26*(1), 62-69.
- Tennakoon, D. (2015). Study on the Effect of Filler Combinations to the Cost and Quality of an Industrial Nitrile Glove (Doctoral dissertation, University of Sri Jayewardenepura, Nugegoda).
- Thuc, C. N. H., & Thuc, H. H. (2013). Synthesis of silica nanoparticles from Vietnamese rice husk by sol-gel method. *Nanoscale research letters*, *8*(1), 58.
- Vansant, E. F., Van Der Voort, P., & Vrancken, K. C. (1995). *Characterization and chemical modification of the silica surface* (Vol. 93): Elsevier. 59-74.
- Voronkov, M. G. e., IUzhelevsk'ii, I. A., & Mileshkevich, V. P. (1978). *The Siloxane bond: physical properties and chemical transformations*: Consultants Bureau.
- Wang, J., Jia, H., Zhang, J., Ding, L., Huang, Y., Sun, D., & Gong, X. (2014). Bacterial cellulose whisker as a reinforcing filler for carboxylated acrylonitrile-butadiene rubber. *Journal of materials science*, *49*(17), 6093-6101.

- Xie, Y., Hill, C. A., Xiao, Z., Militz, H., & Mai, C. (2010). Silane coupling agents used for natural fiber/polymer composites: A review. *Composites Part A: Applied Science and Manufacturing*, 41(7), 806-819.
- Yin, Y., & Alivisatos, A. P. (2005). Colloidal nanocrystal synthesis and the organic–inorganic interface. *Nature*, 437(7059), 664-670.
- Zawrah, M., El-Kheshen, A., & Abd-El-Aal, H. M. (2009). Facile and economic synthesis of silica nanoparticles. *Journal of Ovonic Research*, 5(5), 129-133.
- Zhang, Y., Fang, Y., Wang, S., & Lin, S. (2004). Preparation of spherical nanostructured poly (methacrylic acid)/PbS composites by a microgel template method. *Journal of Colloid and Interface Science*, 272(2), 321-325.
- Zhang, Y., Ge, S., Tang, B., Koga, T., Rafailovich, M., Sokolov, J., . . . McElrath, K. (2001). Effect of carbon black and silica fillers in elastomer blends. *Macromolecules*, 34(20), 7056-7065.
- Zulfiqar, U., Subhani, T., & Husain, S. W. (2016). Synthesis of silica nanoparticles from sodium silicate under alkaline conditions. *Journal of sol-gel science and technology*, 77(3), 753-758.