

REFERENCES

- Abrusci, C., Pablos, J. L., Corrales, T., López-Marín, J., Marín, I., and Catalina, F. (2011). Biodegradation of photo-degraded mulching films based on polyethylenes and stearates of calcium and iron as pro-oxidant additives. *International Biodeterioration and Biodegradation*, 65(3), 451-459.
- Albertsson, A. C., and Karlsson, S. (1995). Degradable polymers for the future. *Acta Polymerica*, 46(2), 114-123.
- Ali, R. R., Rahman, R., Kasmani, R. M., Ibrahim, N., Mustapha, S. N. H., and Hasbullah, H. (2013). Tapioca starch biocomposite for disposable packaging ware. *Chemical Engineering Transactions*, 32, 1711-1716.
- Ammala, A., Bateman, S., Dean, K., Petinakis, E., Sangwan, P., Wong, S., and Leong, K. H. (2011). An overview of degradable and biodegradable polyolefins. *Progress in Polymer Science*, 36(8), 1015-1049.
- Angellier, H., Molina-Boisseau, S., Lebrun, L., and Dufresne, A. (2005). Processing and structural properties of waxy maize starch nanocrystals reinforced natural rubber. *Macromolecules*, 38(9), 3783-3792.
- Angles, M. N., and Dufresne, A. (2000). Plasticized starch/tunicin whiskers nanocomposites. 1. Structural analysis. *Macromolecules*, 33(22), 8344-8353.
- Araujo, J. R. D. (2009). *Compósitos de polietileno de alta densidade reforçados com fibra de curauá obtidos por extrusão e injeção* (Doctoral dissertation, Thesis-State University of Campinas-UNICAMP, Campinas).
- Arkatkar, A., Arutchelvi, J., Sudhakar, M., Bhaduri, S., Uppara, P. V., and Doble, M. (2009). Approaches to enhance the biodegradation of polyolefins. *The Open Environmental Engineering Journal*, 2(1).
- ASTM D638-03: Standard Test Methods for Tensile Properties of Plastic. New York, NY: American Society for Testing Materials.
- Attenburrow, G., Barnes, D. J., Davies, A. P., and Ingman, S. J. (1990). Rheological properties of wheat gluten. *Journal of Cereal Science*, 12(1), 1-14.
- Avella, M., Bonadies, E., Martuscelli, E., and Rimedio, R. (2001). European current standardization for plastic packaging recoverable through composting and biodegradation. *Polymer testing*, 20(5), 517-521.
- Avérous, L. and Halley, P. J. (2009). Biocomposites based on plasticized starch. *Biofuels, bioproducts and biorefining*, 3(3), 329-343.
- Bajpai, A. K., and Shrivastava, J. (2005). In vitro enzymatic degradation kinetics of polymeric blends of crosslinked starch and carboxymethyl cellulose. *Polymer international*, 54(11), 1524-1536.
- Baldwin, E., and Baker, R. (2002). Use of proteins in edible coatings for whole and minimally processed fruits and vegetables. *Book Chapter*, 501-515.

- Barczewski, M., Matykiewicz, D., and Hoffmann, B. (2017). Effect of Quinacridone Pigments on Properties and Morphology of Injection Molded Isotactic Polypropylene. *International Journal of Polymer Science*, 2017.
- Bardi, M. A. G. and Machado, L. D. B. (2012). *RadTech Int. UV EB Technol. Expo Conf. 2012 (RadTech 2012)*. 75-85
- Barnes, D. K., Galgani, F., Thompson, R. C., and Barlaz, M. (2009). Accumulation and fragmentation of plastic debris in global environments. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, 364(1526), 1985-1998.
- Barnes, D. K., Galgani, F., Thompson, R. C., and Barlaz, M. (2009). Accumulation and fragmentation of plastic debris in global environments. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, 364(1526), 1985-1998.
- Bastioli, C., Cerutti, A., Guanella, I., Romano, G. C., and Tosin, M. (1995). Physical state and biodegradation behavior of starch-polycaprolactone systems. *Journal of Polymers and the Environment*, 3(2), 81-95.
- Beg, M. D. H., and Pickering, K. L. (2008). Reprocessing of wood fibre reinforced polypropylene composites. Part II: Hygrothermal ageing and its effects. *Composites Part A: Applied science and manufacturing*, 39(9), 1565-1571.
- Bergeret, A. and Ferry, L. (2009). Influence of the fibre/matrix interface on ageing mechanisms of glass fibre reinforced thermoplastic composites (PA-6, Pet, PBT) in a hygrothermal environment, *Polymer Degradation and Stability*. 94 (9): 1315-1324.
- Biswas, A., Shogren, R. L., Stevenson, D. G., Willett, J. L., and Bhowmik, P. K. (2006). Ionic liquids as solvents for biopolymers: Acylation of starch and zein protein. *Carbohydrate polymers*, 66(4), 546-550.
- Boontima, B., Noomhorm, A., Puttanlek, C., Uttapap, D. and Rungsardthong, V. (2015). Mechanical properties of sugarcane bagasse fiber-reinforced soy based biocomposites. *Journal of Polymers and the Environment*, 23(1), 97-106.
- Briassoulis, D. (2004). An overview on the mechanical behaviour of degradable agricultural films. *Journal of Polymers and the Environment*, 12(2), 65-81.
- Cao, N., Yang, X., and Fu, Y. (2009). Effects of various plasticizers on mechanical and water vapor barrier properties of gelatin films. *Food hydrocolloids*, 23(3), 729-735.
- Chandra, R. and Rustgi, R. (1998). Biodegradable polymers. *Progress in polymer science*, 23(7), 1273-1335.

- Chandra, R. U. S. T. G. I., and Rustgi, R. (1998). Degradable polymers. *Progress in polymer science*, 23(7), 1273-1335.
- Cho, J. W., Woo, K. S., Chun, B. C., and Park, J. S. (2001). Ultraviolet reflective and mechanical properties of polyethylene mulching films. *European polymer journal*, 37(6), 1227- 1232.
- Choudhary, P., Mohanty, S., Nayak, S. K., and Unnikrishnan, L. (2011). Poly (L-lactide)/polypropylene blends: Evaluation of mechanical, thermal, and morphological characteristics. *Journal of Applied Polymer Science*, 121(6), 3223-3237.
- Danjaji, I. D., Nawang, R., Ishiaku, U. S., Ismail, H., and Ishak, Z. M. (2002). Degradation studies and moisture uptake of sago-starch-filled linear low-density polyethylene composites. *Polymer Testing*, 21(1), 75-81.
- DeLeo, C. L. (2010). *Reactively compatibilized starch-based renewable polymer blends* (Doctoral dissertation, University of Pittsburgh).
- Demir, H. and Atikler, U. (2006). The effect of fiber surface treatments on the tensile and water sorption properties of polypropylene-luffa fiber composites. *Composite Part A: Applied Science and Manufacturing*, 37(3): 447-456.
- Doty, L. F. (2005). A Brief Overview of Degradable Plastics.
- Dubief, D., Samain, E., and Dufresne, A. (1999). Polysaccharide microcrystals reinforced amorphous poly(β -hydroxy octanoate) nano composite materials. *Macromolecules*, 32(18), 5765-5771.
- Dudowicz, J., Douglas, J. F., and Freed, K. F. (2014). Two glass transitions in miscible polymer blends. *The Journal of chemical physics*, 140(24), 244905.
- Elvira, C., Yi, F., Azevedo, M. C., Rebouta, L., Cunha, A. M., San Román, J., and Reis, R. L. (2003). Plasma-and chemical-induced graft polymerization on the surface of starch-based biomaterials aimed at improving cell adhesion and proliferation. *Journal of Materials Science: Materials in Medicine*, 14(2), 187-194.
- Fabiyi, J. S., McDonald, A. G., Wolcott, M. P., and Griffiths, P. R. (2008). Wood plastic composites weathering: Visual appearance and chemical changes. *Polymer Degradation and Stability*, 93(8), 1405-1414.
- Fechine, G. J. M., Rosa, D. S., Rezende, M. E. and Demarquette, N. R. (2009). Effect of UV radiation and pro-oxidant on PP biodegradability. *Polymer Engineering and Science*, 49(1), 123-128.

- Fedor, G. R., and Brennan, P. J. (1996). Comparison between natural weathering and fluorescent UV exposures: UVA-340 lamp test results. In *Durability Testing of Nonmetallic Materials*. ASTM International.
- Feldmann, M., and Bledzki, A. K. (2014). Bio-based polyamides reinforced with cellulosic fibres—processing and properties. *Composites Science and Technology*, 100, 113-120.
- Gao, C., Stading, M., Wellner, N., Parker, M. L., Noel, T. R., Mills, E. C., and Belton, P. S. (2006). Plasticization of a protein-based film by glycerol: a spectroscopic, mechanical, and thermal study. *Journal of agricultural and food chemistry*, 54(13), 4611-4616.
- Garcia, M., Van Vliet, G., Jain, S., Schrauwen, B., Sarkissov, A., Van Zyl, W. E., and Boukamp, B. (2004). Polypropylene/SiO₂ nanocomposites with improved mechanical properties. *Reviews on advanced materials science*, 6(2), 169-175.
- Gellert, E. P. and Turley, D. M. (1999). Seawater immersion ageing of glass-fibre reinforced polymer laminates for marine applications. *Composites Part A: Applied Science and Manufacturing*, 30 (11): 1259-1265.
- Gelse, K., Pöschl, E., and Aigner, T. (2003). Collagens—structure, function, and biosynthesis. *Advanced drug delivery reviews*, 55(12), 1531-1546.
- George, E. R., Sullivan, T. M. and Park, E. H. (1994). Thermoplastic starch blends with a poly (ethylene-co-vinyl alcohol): Processability and physical properties. *Polymer Engineering and Science*, 34(1), 17-23.
- Gontard, N., Guilbert, S., and CUQ, J. L. (1993). Water and glycerol as plasticizers affect mechanical and water vapor barrier properties of an edible wheat gluten film. *Journal of Food Science*, 58(1), 206-211.
- Gregory, M. R. (2009). Environmental implications of plastic debris in marine settings—entanglement, ingestion, smothering, hangers-on, hitch-hiking and alien invasions. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, 364(1526), 2013-2025.
- Guillet, J. (1995). Plastics and the environment. *Degradable Polymers: Principles and Applications*, G. Scott and D. Gilead (eds.), London, Chapman and Hall, 216-246.
- Gulmine, J. V., Janissek, P. R., Heise, H. M., and Akcelrud, L. (2003). Degradation profile of polyethylene after artificial accelerated weathering. *Polymer degradation and stability*, 79(3), 385-397.
- Gunatillake, P., Mayadunne, R., and Adhikari, R. (2006). Recent developments in degradable synthetic polymers. *Biotechnology annual review*, 12, 301-347.

- Hadad, D., Geresh, S., and Sivan, A. (2005). Biodegradation of polyethylene by the thermophilic bacterium *Brevibacillus borstelensis*. *Journal of applied microbiology*, 98(5), 1093-1100.
- Hamdan, S., Hashim, D. M. A., Ahmad, M., and Embong, S. (2000). Compatibility studies of polypropylene (PP)-sago starch (SS) blends using DMTA. *Journal of polymer research*, 7(4), 237-244.
- Hannequart, J. P. (2004). Good practice guide on waste plastics recycling: a guide by and for local and regional authorities. *Association of cities and regions for recycling (ACRR), Belgium*.
- Held, P. (2012). Enzymatic Digestion of Polysaccharides, Part II: Optimization of Polymer Digestion and Glucose Production in Microplates. *Biofuel Research*.
- Hinsken, H., Moss, S., Pauquet, J. R., and Zweifel, H. (1991). Degradation of polyolefins during melt processing. *Polymer degradation and stability*, 34(1-3), 279-293.
- Ibim, S. E., Urich, K. E., Attawia, M., Shastri, V. R., El-Amin, S. F., Bronson, R., and Laurencin, C. T. (1998). Preliminary in vivo report on the osteocompatibility of poly (anhydride-co-imides) evaluated in a tibial model. *Journal of Biomedical Materials Research Part A*, 43(4), 374-379.
- Iherika, C. L (2011). Experimental study of the effect of starch on the mechanical properties and biodegradation of polypropylene, FUTO, Imo state, Nigeria.
- Imam, S. H., Gordon, S. H., Shogren, R. L., and Greene, R. V. (1995). Biodegradation of starch- poly (β -hydroxybutyrate-co-valerate) composites in municipal activated sludge. *Journal of polymers and the environment*, 3(4), 205-213.
- Ishiaku, U. S., Pang, K. W., Lee, W. S., and Ishak, Z. M. (2002). Mechanical properties and enzymic degradation of thermoplastic and granular sago starch filled poly (ϵ -caprolactone). *European polymer journal*, 38(2), 393-401.
- Islam, M. R., Beg, M. D. H., and Gupta, A. (2014). Characterization of alkali-treated Kenaf fibre-reinforced recycled polypropylene composites. *Journal of Thermoplastic Composite Materials*, 27(7), 909-932.
- Islam, M. R., Gupta, A., Rivai, M., Beg, M. D. H., and Mina, M. (2016). Effects of fiber-surface treatment on the properties of hybrid composites prepared from oil palm empty fruit bunch fibers, glass fibers, and recycled polypropylene. *Journal of Applied Polymer Science*, 133(11).
- Islam, N. M., Othman, N., Ahmad, Z., and Ismail, H. (2010). Effect of pro-degradant additives concentration on aging properties of polypropylene films. *Polymer-Plastics Technology and Engineering*, 49(3), 272-278.

- Islam, N. Z. M., Othman, N., Ahmad, Z., and Ismail, Z. (2011). Effect of pro-degradant additive on photo-oxidative aging of polypropylene film. *Sains Malaysiana*, 40(7), 803-808.
- Ismail, H., Nordin, R., Ahmad, Z. and Rashid, A. (2010). Processibility and miscibility of linear low-density polyethylene/poly (vinyl alcohol) blends: In situ compatibilization with maleic acid. *Iran. Polym. J*, 19(4), 297-308.
- Jakubowicz, I. (2003). Evaluation of degradability of degradable polyethylene (PE). *Polymer Degradation and Stability*, 80(1), 39-43.
- Jang, M. K., Kong, B. G., Jeong, Y. I., Lee, C. H., and Nah, J. W. (2004). Physicochemical characterization of α -chitin, β -chitin, and γ -chitin separated from natural resources. *Journal of Polymer Science Part A: Polymer Chemistry*, 42(14), 3423-3432.
- Jasberg, B., Swanson, C., Nelsen, T., and Doane, W. (1992). Mixing polyethylene-poly (ethylene-co-acrylic acid) copolymer-starch formulations for blown films. *ARS reprints collection*.
- Kalogerias, I. M. (2016). Glass-transition Phenomena in Polymer Blends. *Encyclopedia of Polymer Blends*, 1-134.
- Kalpakjian, S. (1995). Manufacturing Engineering and Technology Addison-Wesley. Reading MA.
- Karina, M., Onggo, H., Abdullah, A. H. D. and Syampuwardi, A. (2008). Effect of oil palm empty fruit bunch fibre on the physical and mechanical properties of fibre glass reinforced polyester resin. *Journal of Biological Sciences*. 8: 100-106.
- Katsoulotos, G., Pappa, G., Tarantili, P. A., and Magoulas, K. (2008). Preparation and characterization of functionalized low density polyethylene matrix biocomposites. *Polymer Engineering and Science*, 48(5), 902-911.
- Kawasaki, *Carbohydrate Polymers*, 2010, 36, 81 – 266.
- Kester, J. J., and Fennema, O. R. (1986). Edible films and coatings: a review. *Food technology (USA)*.
- Khabbaz, F., Albertsson, A. C., and Karlsson, S. (1999). Chemical and morphological changes of environmentally degradable polyethylene films exposed to thermo-oxidation. *Polymer Degradation and Stability*, 63(1), 127-138.
- Khalil, H. P. S.A, Siti Alwani, M., Ridzuan, R., Kamarudin, H., and Khairul, A. (2008). Chemical composition, morphological characteristics, and cell wall structure of

- Malaysian oil palm fibers. *Polymer-Plastics Technology and Engineering*, 47(3), 273-280.
- Khiari, Z., Ndagijimana, M., and Betti, M. (2014). Low molecular weight bioactive peptides derived from the enzymatic hydrolysis of collagen after isoelectric solubilization/precipitation process of turkey by-products. *Poultry science*, 93(9), 2347-2362.
- Kim, H. S., Yang, H. S., and Kim, H. J. (2005). Biodegradability and mechanical properties of agro-flour-filled polybutylene succinate biocomposites. *Journal of Applied Polymer Science*, 97(4), 1513-1521.
- Kitching, S. and Donald, A. M. (1998). Beam damage of polypropylene in the environmental scanning electron microscope: an FTIR study. *Journal of Microscopy*, 190(3), 357-365.
- Koenig, M. F., and Huang, S. J. (1995). Degradable blends and composites of polycaprolactone and starch derivatives. *Polymer*, 36(9), 1877-1882.
- Kondratowicz, F. Ł., and Ukielski, R. (2009). Synthesis and hydrolytic degradation of poly (ethylene succinate) and poly (ethylene terephthalate) copolymers. *Polymer Degradation and Stability*, 94(3), 375-382.
- Konduri, M. K., Koteswarareddy, G., Rohini Kumar, D. B., Venkata Reddy, B., and Lakshmi Narasu, M. (2011). Effect of pro-oxidants on biodegradation of polyethylene (LDPE) by indigenous fungal isolate, *Aspergillus oryzae*. *Journal of Applied Polymer Science*, 120(6), 3536-3545.
- Koroleva, A., Huebner, M., Lukanina, Y., Khvatov, A., Popov, A., and Monakhova, T. (2012). Oxo-biodegradability of polyethylene blends with starch, cellulose and synthetic additives.
- Koutny, M., Sancelme, M., Dabin, C., Pichon, N., Delort, A. M., and Lemaire, J. (2006). Acquired biodegradability of polyethylenes containing pro-oxidant additives. *Polymer degradation and stability*, 91(7), 1495-1503.
- Kumar, K. A., and Soundararajan, S. (2016). Studies on the Mechanical Properties and UV-Accelerated Weathering of LDPE with Benzophenone and Carboxy Methylated Starch. *Polymers from Renewable Resources*, 7(4), 155.
- Kumar, N. (2002). Polyanhydrides: An Overview, 54 ADV. *Drug Del. Rev.*, 889.
- Langer, R. (1995). Biomaterials and biomedical engineering. *Chemical Engineering Science*, 50(24), 4109-4121.

- Lawton, J. W. (1996). Effect of starch type on the properties of starch containing films. *Carbohydrate Polymers*, 29(3), 203-208.
- Lee, C. K., Cho, M. S., Kim, I. H., Lee, Y. and Nam, J. D. (2010). Preparation and physical properties of the biocomposite, cellulose diacetate/kenaf fibre sized with poly(vinyl alcohol). *Macromolecular Research*, 18(6): 566-570.
- Lee, H. S., Cho, D. and Han, S. O. (2008). Effect of natural fiber surface treatments on the interfacial and mechanical properties of henequen/polypropylene biocomposites. *Macromolecular Research*, 16(5), 411-417.
- Lim, S. T., Jane, J. L., Rajagopalan, S., and Seib, P. A. (1992). Effect of Starch Granule Size on Physical Properties of Starch-Filled Polyethylene Film. *Biotechnology progress*, 8(1), 51-57.
- Lin, Q., Zhou, X., and Dai, G. (2002). Effect of hydrothermal environment on moisture absorption and mechanical properties of wood flour-filled polypropylene composites. *Journal of Applied Polymer Science*, 85(14), 2824-2832.
- Löfgren, A., Albertsson, A. C., Dubois, P., and Jérôme, R. (1995). Recent advances in ring-opening polymerization of lactones and related compounds. *Journal of Macromolecular Science, Part C: Polymer Reviews*, 35(3), 379-418.
- Longo, C., Savaris, M., Zeni, M., Brandalise, R. N., and Grisa, A. M. C. (2011). Degradation study of polypropylene (PP) and bioriented polypropylene (BOPP) in the environment. *Materials Research*, 14(4), 442-448.
- Lv, S., Gu, J., Cao, J., Tan, H., and Zhang, Y. (2015). Effect of annealing on the thermal properties of poly (lactic acid)/starch blends. *International journal of biological macromolecules*, 74, 297-303.
- Ma, X., Yu, J., and Kennedy, J. F. (2005). Studies on the properties of natural fibers-reinforced thermoplastic starch composites. *Carbohydrate Polymers*, 62(1), 19-24.
- Maharana, T., Mohanty, B., and Negi, Y. S. (2009). Melt-solid polycondensation of lactic acid and its biodegradability. *Progress in polymer science*, 34(1), 99-124.
- Majid, R. A., Ismail, H., and Taib, R. M. (2010). The effects of natural weathering on the properties of linear density polyethylene (LDPE)/thermoplastic sago starch (TPSS) blends. *Polymer-Plastics Technology and Engineering*, 49(11), 1142-1149.
- Malaysian Polymer Journal (MPJ). (2007), 2: 31-57.
- Mali, S., Sakanaka, L. S., Yamashita, F. and Grossmann, M. V. E. (2005). Water sorption and mechanical properties of cassava starch films and their relation to plasticizing effect. *Carbohydrate Polymers*, 60(3), 283-289.

- Mani, R., and Bhattacharya, M. (1998). Properties of injection moulded starch/synthetic polymer blends—III. Effect of amylopectin to amylose ratio in starch. *European polymer journal*, 34(10), 1467-1475.
- Marcovich, N. E., and Villar, M. A. (2003). Thermal and mechanical characterization of linear low-density polyethylene/wood flour composites. *Journal of Applied Polymer Science*, 90(10), 2775-2784.
- Marousis, S. N., and Saravacos, G. D. (1990). Density and porosity in drying starch materials. *Journal of Food Science*, 55(5), 1367-1372.
- Martin, O., Schwach, E., and Couturier, Y. (2001). Properties of degradable multilayer films based on plasticized wheat starch. *Starch-Stärke*, 53(8), 372-380.
- Martins, A. B., and Santana, R. M. C. (2016). Effect of carboxylic acids as compatibilizer agent on mechanical properties of thermoplastic starch and polypropylene blends. *Carbohydrate polymers*, 135, 79-85.
- Migneault, S., Koubaa, A., Erchiqui, F., Chaala, A., Englund, K. and Wolcott, M. P. (2009). Effects of processing method and fiber size on the structure and properties of wood-plastic composites, *Composites Part A: Applied Science and Manufacturing*. 40: 80-85.
- Mina, J., Valadez-Gonzalez, A., Herrera-Franco, P., Zuluaga, F., and Delvasto, S. (2011). Physicochemical characterization of natural and acetylated thermoplastic cassava starch. *Dyna*, 78(166), 174-182.
- Mohanty, A. K., Misra, M., and Hinrichsen, G. (2000). Biofibers, biodegradable polymers and biocomposites: an overview. *Macromolecular materials and Engineering*, 276(1), 1-24.
- Mooney, B. P. (2009). The second green revolution? Production of plant-based degradable plastics. *Biochemical Journal*, 418(2), 219-232.
- Morent, R., De Geyter, N., Leys, C., Gengembre, L. and Payen, E. (2008). Comparison between XPS-and FTIR-analysis of plasma-treated polypropylene film surfaces. *Surface and Interface Analysis*, 40(3-4), 597-600.
- Mortazavi, S., Ghasemi, I., and Oromiehie, A. (2013). Effect of phase inversion on the physical and mechanical properties of low density polyethylene/thermoplastic starch. *Polymer Testing*, 32(3), 482-491.
- Mortazavi, S., Ghasemi, I., and Oromiehie, A. (2013). Effect of phase inversion on the physical and mechanical properties of low density polyethylene/thermoplastic starch. *Polymer Testing*, 32(3), 482-491.

- Müller, P., Bere, J., Fekete, E., Móczó, J., Nagy, B., Kállay, M., and Pukánszky, B. (2016). Interactions, structure and properties in PLA/plasticized starch blends. *Polymer*, 103, 9-18.
- Na, B., Zou, S., Lv, R., Luo, M., Pan, H., and Yin, Q. (2011). Unusual cold crystallization behavior in physically aged poly (L-lactide). *The Journal of Physical Chemistry B*, 115(37), 10844-10848.
- Nair, L. S., and Laurencin, C. T. (2007). Degradable polymers as biomaterials. *Progress in polymer science*, 32(8), 762-798.
- Navarro, R., Torre, L., Kenny, J. M., and Jiménez, A. (2003). Thermal degradation of recycled polypropylene toughened with elastomers. *Polymer Degradation and Stability*, 82(2), 279-290.
- Nawang, R., Danjaji, I. D., Ishiaku, U. S., Ismail, H. and Ishak, Z. M. (2001). Mechanical properties of sago starch-filled linear low density polyethylene (LLDPE) composites. *Polymer Testing*, 20(2), 167-172.
- Nguyen, T. A., Gregersen, Ø. W., and Männle, F. (2015). Thermal oxidation of polyolefins by mild pro-oxidant additives based on iron carboxylates and lipophilic amines: Degradability in the absence of light and effect on the adhesion to paperboard. *Polymers*, 7(8), 1522-1540.
- Nguyen, T. A., Männle, F., and Gregersen, Ø. W. (2012). Polyethylene/octa-(ethyl octadeca-10, 13 dienoamide) silsesquioxane blends and the adhesion strength to paperboard. *International Journal of Adhesion and Adhesives*, 38, 117-124.
- Nikazar, M., Safari, B., Bonakdarpour, B., and Milani, Z. (2005). Improving the biodegradability and mechanical strength of corn starch-LDPE blends through formulation modification. *Iranian Polymer Journal*, 14(12), 1050.
- Norulizani, M. A., Paridah, M. T., Anwar, U. M. K., MohdNor, M. Y. and H'ng, P. S. (2013). Effects of fiber treatment on morphology, tensile and thermogravimetric analysis of oil palm empty fruit bunches fibers, *Composites: Part B*. 45: 1251-1257.
- Obasi, H. C. and Igwe, I. O. (2014). Cassava starch mixed polypropylene degradable polymer: Preparation Characterization and effects of biodegradation products on growth of plants. *International Journal of Science Research Engineering*, 3: 802-807.
- Obasi, H. C., Igwe, I. O., Ogbobe, O., Aharanwa, B. C., Egeolu, F. C. (2015). Processing and characterization of thermoplastic starch/ polypropylene blends. *International Journal of Scientific Research in Science, Engineering and Technology*, 1: 7-13.

- Obasi, H. C., Onuoha, F. N., Eze, I. O., Nwanonenyi, S. C., Arukalam, I. O., and Uzoma, P. C. (2013). Effect of soil burial on properties of polypropylene (PP)/plasticized potato starch (PPS) Blends. *The International Journal Of Engineering And Science (IJES)*, 2(8), 14-18.
- Oduola, M. K., and Akpeji, P. O. (2015). Effect of Starch on the Mechanical and Rheological Properties of Polypropylene. *American Journal of Chemical Engineering*, 3(2-1), 1-8.
- Okada, M. (2002). Chemical syntheses of biodegradable polymers. *Progress in polymer science*, 27(1), 87-133.
- Okada, M. (2002). Chemical syntheses of degradable polymers. *Progress in polymer science*, 27(1), 87-133.
- Oliveira, T. A., Oliveira, R. R., Barbosa, R., Azevedo, J. B., and Alves, T. S. (2017). Effect of reprocessing cycles on the degradation of PP/PBAT-thermoplastic starch blends. *Carbohydrate Polymers*, 168, 52-60.
- Oragwu, I. P., and Igwe, I. O. (2013). Studies on the Mechanical and Water uptake Properties of Some Polyolefins/Corn Starch Blends (1). *American Journal of Engineering Research*, 2(7), 22-27.
- Osawa, Z., Kurisu, N., Nagashima, K., and Nakano, K. (1979). The effect of transition metal stearates on the photodegradation of polyethylene. *Journal of Applied polymer science*, 23(12), 3583-3590.
- Otey, F. H. and Westhoff, R. P. (1982). *U.S. Patent No. 4,337,181*. Washington, DC: U.S. Patent and Trademark Office.
- Ouhib, R., Renault, B., Mouaziz, H., Nouvel, C., Dellacherie, E., and Six, J. L. (2009). Degradable amylose-g-PLA glycopolymers from renewable resources. *Carbohydrate Polymers*, 77(1), 32-40.
- Pablos, J. L., Abrusci, C., Marín, I., López-Marín, J., Catalina, F., Espí, E., and Corrales, T. (2010). Photodegradation of polyethylenes: comparative effect of Fe and Ca-stearates as pro-oxidant additives. *Polymer degradation and stability*, 95(10), 2057-2064.
- Parandoosh, S., and Hudson, S. M. (1993). The acetylation and enzymatic degradation of starch films. *Journal of applied polymer science*, 48(5), 787-791.
- Park, J. W., Im, S. S., Kim, S. H., and Kim, Y. H. (2000). Degradable polymer blends of poly (L-lactic acid) and gelatinized starch. *Polymer Engineering and Science*, 40(12), 2539-2550.

- Peres, A. M., Pires, R. R., and Oréface, R. L. (2016). Evaluation of the effect of reprocessing on the structure and properties of low density polyethylene/thermoplastic starch blends. *Carbohydrate polymers*, 136, 210-215.
- Pochiraju, K. V., Tandon, G. P., and Pagano, N. J. (2001). Analyses of single fiber pushout considering interfacial friction and adhesion. *Journal of the Mechanics and Physics of Solids*, 49(10), 2307-2338.
- Preechawong, D., Peesan, M., Supaphol, P., and Rujiravanit, R. (2004). Characterization of starch/poly (ϵ -caprolactone) hybrid foams. *Polymer testing*, 23(6), 651-657.
- Pritchard, G and Davis, J. (1998). *Plastics Additives: An AZ Reference. Flame retardants: halogen-free systems (including phosphorus additives)*, 277-286.
- Qin, L., Qiu, J., Liu, M., Ding, S., Shao, L., Lü, S., and Fu, X. (2011). Mechanical and thermal properties of poly (lactic acid) composites with rice straw fiber modified by poly (butyl acrylate). *Chemical Engineering Journal*, 166(2), 772-778.
- Rabek, J. F. (2012). *Polymer photodegradation: mechanisms and experimental methods*. Springer Science and Business Media.
- Rahman, M. R., Islam, M. N. and Huque, M. M. (2010). Influence of fiber treatment on the mechanical and morphological properties of sawdust reinforced polypropylene composites. *Journal of Polymers and the Environment*, 18(3), 443-450.
- Ratnayake, W. S., Hoover, R., Shahidi, F., Perera, C., and Jane, J. (2001). Composition, molecular structure, and physicochemical properties of starches from four field pea (*Pisum sativum* L.) cultivars. *Food Chemistry*, 74(2), 189-202.
- Reddy, N., Jiang, Q., Jin, E., Shi, Z., Hou, X., and Yang, Y. (2013). Bio-thermoplastics from grafted chicken feathers for potential biomedical applications. *Colloids and Surfaces B: Biointerfaces*, 110, 51-58.
- Rodriguez-Llamazares, S. A. D. D. Y. S. (2013). Polypropylene/starch blends: Study of thermal and morphological properties. *Journal of the Chilean Chemical Society*, 58(1), 1643-1646.
- Rosa, D. S., Guedes, C. G. F. and Carvalho, C. L. (2007). Processing and thermal, mechanical and morphological characterization of post-consumer polyolefins/thermoplastic starch blends. *Journal of materials science*, 42(2), 551-557.
- Rowe, R. K., and Sangam, H. P. (2002). Durability of HDPE geomembranes. *Geotextiles and Geomembranes*, 20(2), 77-95.

- Roy, P. K., Singh, P., Kumar, D., and Rajagopal, C. (2010). Manganese stearate initiated photo-oxidative and thermo-oxidative degradation of LDPE, LLDPE and their blends. *Journal of applied polymer science*, 117(1), 524-533.
- Roy, P. K., Surekha, P., Rajagopal, C., and Choudhary, V. (2006). Effect of cobalt carboxylates on the photo-oxidative degradation of low-density polyethylene. Part-I. *Polymer Degradation and Stability*, 91(9), 1980-1988.
- Roy, P. K., Surekha, P., Rajagopal, C., and Choudhary, V. (2007). Comparative effects of cobalt carboxylates on the thermo-oxidative degradation of LDPE films. *Journal of applied polymer science*, 103(6), 3758-3765.
- Roy, P. K., Surekha, P., Rajagopal, C., and Choudhary, V. (2007). Thermal degradation studies of LDPE containing cobalt stearate as pro-oxidant. *Express Polym. Lett*, 1(4), 208-216.
- Roy, P. K., Surekha, P., Rajagopal, C., Chatterjee, S. N., and Choudhary, V. (2007). Studies on the photo-oxidative degradation of LDPE films in the presence of oxidised polyethylene. *Polymer degradation and stability*, 92(6), 1151-1160.
- Roy, P. K., Surekha, P., Rajagopal, C., Chatterjee, S. N., and Choudhary, V. (2005). Effect of benzil and cobalt stearate on the aging of low-density polyethylene films. *Polymer Degradation and Stability*, 90(3), 577-585.
- Roy, P. K., Surekha, P., Rajagopal, C., Chatterjee, S. N., and Choudhary, V. (2006). Accelerated aging of LDPE films containing cobalt complexes as prooxidants. *Polymer Degradation and Stability*, 91(8), 1791-1799.
- Roy, P. K., Surekha, P., Rajagopal, C., Raman, R., and Choudhary, V. (2006). Study on the degradation of low-density polyethylene in the presence of cobalt stearate and benzil. *Journal of Applied polymer science*, 99(1), 236-243.
- Roy, P. K., Surekha, P., Raman, R., and Rajagopal, C. (2009). Investigating the role of metal oxidation state on the degradation behaviour of LDPE. *Polymer degradation and stability*, 94(7), 1033-1039.
- Sailaja, R. R. N. (2005). Mechanical properties of esterified tapioca starch-LDPE blends using LDPE-co-glycidyl methacrylate as compatibilizer. *Polymer international*, 54(2), 286-296.
- Salaberria, A. M., Fernandes, S. C., Diaz, R. H., and Labidi, J. (2015). Processing of α -chitin nanofibers by dynamic high pressure homogenization: characterization and antifungal activity against *A. niger*. *Carbohydrate polymers*, 116, 286-291.

- Salaberria, A. M., Labidi, J., and Fernandes, S. C. (2014). Chitin nanocrystals and nanofibers as nano-sized fillers into thermoplastic starch-based biocomposites processed by melt-mixing. *Chemical Engineering Journal*, 256, 356-364.
- Sanadi, A. R., Hunt, J. F., Caulfield, D. F., Kovacsvolgyi, G., and Destree, B. (2001, May). High fiber-low matrix composites: kenaf fiber/polypropylene. In *Proceedings of 6th International Conference on Woodfiber-Plastic Composites* (pp. 15-16).
- Scott, G. (1999). *Polymers and the Environment*. Royal Society of Chemistry.
- Scott, G. (2005). In *Degradable Polymers for Industrial Applications*; Smith, R., Eds.; Cambridge: Woodhead, Chapter 17,451-473.
- Shah, P. B., Bandopadhyay, S. and Bellare, J. R. (1995). Environmentally degradable starch filled low density polyethylene. *Polymer Degradation and Stability*, 47(2), 165-173.
- Shaik, A. A., Richter, M., Kricheldorf, H. R., and Krüger, R. P. (2001). New polymer syntheses. CIX. Biodegradable, alternating copolyesters of terephthalic acid, aliphatic dicarboxylic acids, and alkane diols. *Journal of Polymer Science Part A: Polymer Chemistry*, 39(19), 3371-3382.
- Sharma, N., Khatkar, B., Kaushik, R., Sharma, P., and Sharma, R. (2017). Isolation and development of wheat based gluten edible film and its physicochemical properties. *International Food Research Journal*, 24(1), 94-101.
- Sharma, S., and Gupta, A. (2016). Sustainable management of keratin waste biomass: applications and future perspectives. *Brazilian Archives of Biology and Technology*, 59.
- Sharma, S., Arun, G., Saufi, S. M., Chik, T., Chua, G. K., Pradeep Kumar, P., Jayshree, T., Malini, S. In *Proceedings of the National Conference for Postgraduate Research (NCON-PGR 2016)*, Universiti Malaysia Pahang (UMP), Pekan. 2016 693-699.
- Sharma, S., Gupta, A., Chik, S. M. S. B. T., Kee, C. Y. G. and Poddar, P. K. (2017). In *IOP Conference Series: Materials Science and Engineering*, 012-013.
- Sharma, S., Gupta, A., Chik, S. M. S., Kee, C. G., Mistry, B. M., Kim, D. H., and Sharma, G. (2017). Characterization of keratin microparticles from feather biomass with potent antioxidant and anticancer activities. *International Journal of Biological Macromolecules*, 104, 189-196.
- Shi, P., Schach, R., Munch, E., Montes, H., and Lequeux, F. (2013). Glass transition distribution in miscible polymer blends: from calorimetry to rheology. *Macromolecules*, 46(9), 3611-3620.

- Shin, B. Y., Lee, S. I., Shin, Y. S., Balakrishnan, S., and Narayan, R. (2004). Rheological, mechanical and biodegradation studies on blends of thermoplastic starch and polycaprolactone. *Polymer Engineering and Science*, 44(8), 1429-1438.
- Shinoj, S., Visvanathan, R., Panigrahi, S., and Kochubabu, M. (2011). Oil palm fiber (OPF) and its composites: A review. *Industrial Crops and Products*, 33(1), 7-22.
- Shirai, M. A., Grossmann, M. V. E., Mali, S., Yamashita, F., Garcia, P. S., and Müller, C. M. O. (2013). Development of biodegradable flexible films of starch and poly (lactic acid) plasticized with adipate or citrate esters. *Carbohydrate polymers*, 92(1), 19-22.
- Shogren, R. L. (1993). Effects of moisture and various plasticizers on the mechanical properties of extruded starch. *Degradable polymers and packaging*, 141-150.
- Shurtleff, W., and Aoyagi, A. (1989). Soy Protein Isolates, Concentrates, and Textured Soy Protein Products.
- Silverstein, R. M., Bassler, G. C., and Morrill, T. C. (1991). Spectrometric identification of organic molecules.
- Sipinen, A. J., and Rutherford, D. R. (1993). A study of the oxidative degradation of polyolefins. *Journal of Polymers and the Environment*, 1(3), 193-202.
- Sobral, P. D. A., Menegalli, F. C., Hubinger, M. D., and Roques, M. A. (2001). Mechanical, water vapor barrier and thermal properties of gelatin based edible films. *Food hydrocolloids*, 15(4), 423-432.
- Song, Y., and Zheng, Q. (2008). Improved tensile strength of glycerol-plasticized gluten bioplastic containing hydrophobic liquids. *Bioresource technology*, 99(16), 7665-7671.
- Soni, R. K., Soam, S., and Dutt, K. (2009). Studies on biodegradability of copolymers of lactic acid, terephthalic acid and ethylene glycol. *Polymer Degradation and Stability*, 94(3), 432-437.
- Soundararajan, S and Palanivelu, K. (2014). Studies on mechanical, thermal, electrical properties and accelerated UV weathering of PP with HIPS blends. *Journal of Polymer and Textile Engineering*, 1(3), 5-8.
- Sperling, L. H. and Carrher, C.E. (1988). Gelatin. *Encyclopedia of Polymer Science and Engineering*, 12: 672.
- Sreekala, M. S. and Thomas, S. (2003). Effect of fibre surface modification on water-sorption characteristics of oil palm fibres. *Composites Science and Technology*, 63(6): 861-869.

- Standard, A. (1998). In Annual Book of ASTM Standards 8, 32-35.
- St-Pierre, N., Favis, B. D., Ramsay, B. A., Ramsay, J. A. and Verhoogt, H. (1997). Processing and characterization of thermoplastic starch/polyethylene blends. *Polymer*, 38(3), 647-655.
- Subramaniam, M., Sharma, S., Gupta, A., and Abdullah, N. (2018). Enhanced degradation properties of polypropylene integrated with iron and cobalt stearates and its synthetic application. *Journal of Applied Polymer Science*, 135(12).
- Sudesh, K., and Iwata, T. (2008). Sustainability of biobased and degradable plastics. *CLEAN–Soil, Air, Water*, 36(5-6), 433-442.
- Sui, G., Fuqua, M. A., Ulven, C. A., and Zhong, W. H. (2009). A plant fiber reinforced polymer composite prepared by a twin-screw extruder. *Bioresource technology*, 100(3), 1246-1251.
- Suits, L. D., and Hsuan, Y. G. (2003). Assessing the photo-degradation of geosynthetics by outdoor exposure and laboratory weatherometer. *Geotextiles and Geomembranes*, 21(2), 111-122.
- Swain, S. N., Biswal, S. M., Nanda, P. K., and Nayak, P. L. (2004). Degradable soy-based plastics: opportunities and challenges. *Journal of Polymers and the Environment*, 12(1), 35-42.
- Thakore, I. M., Iyer, S., Desai, A., Lele, A. and Devi, S. (1999). Morphology, thermomechanical properties, and biodegradability of low density polyethylene/starch blends. *Journal of applied polymer science*, 74(12), 2791-2802.
- Viola, N. M., Battistelle, R. A. G., and De Domênico, I. (2013). Use of waste plastic and wood flour in the production of composite.
- Viswanath, V. (2010). Degradation studies of polypropylene fibers and nonwovens with prodegradant additives.
- Wahab, M. A. and Mottaleb, M. A. (2001). Mechanical properties and water absorption of rice starch-filled linear low density polyethylene. *Korea Polymer Journal*, 9(6), 297-302.
- Wallström, S., and Karlsson, S. (2004). Biofilms on silicone rubber insulators; microbial composition and diagnostics of removal by use of ESEM/EDS: Composition of biofilms infecting silicone rubber insulators. *Polymer degradation and stability*, 85(2), 841-846.
- Wallström, S., Strömberg, E., and Karlsson, S. (2005). Microbiological growth testing of polymeric materials: an evaluation of new methods. *Polymer testing*, 24(5), 557-563.

- Wang, K., Addiego, F., Bahlouli, N., Ahzi, S., Rémond, Y., Toniazzo, V., and Muller, R. (2012). Analysis of thermomechanical reprocessing effects on polypropylene/ethylene octene copolymer blends. *Polymer degradation and stability*, 97(8), 1475-1484.
- Waryat, R. M., Suryani, A., Yuliasih, I., and Johan, S. (2013). Using of a compatibilizer to improve morphological, physical and mechanical properties of degradable plastic from thermoplastic starch/LLDPE blends. *Int J Eng Technol*, 13, 115-122.
- Weber, C. J. (2000). Biobased packaging material for the food industry, status and perspectives. *Department of Dairy and Food Science*.
- Willett, J. L. (1994). Mechanical properties of LDPE/granular starch composites. *Journal of Applied Polymer Science*, 54(11), 1685-1695.
- Witt, U., Einig, T., Yamamoto, M., Kleeberg, I., Deckwer, W. D., and Müller, R. J. (2001). Biodegradation of aliphatic–aromatic copolyesters: evaluation of the final biodegradability and ecotoxicological impact of degradation intermediates. *Chemosphere*, 44(2), 289-299.
- Wu, C. S. (2003). Physical properties and biodegradability of maleated-polycaprolactone/starch composite. *Polymer Degradation and Stability*, 80(1), 127-134.
- Yu, M., He, C., Huang, R., Liu, J., and Lu, D. (2016). Accelerated weathering of recycled polypropylene packaging bag composites reinforced with wheat straw fibers. *Forest Products Journal*, 66(7), 485-494.
- Zeena, P., Hamza, K.F., Anna, D., Thomas, K. and Saritha, G.B. (2009). Biodegradability studies on LDPE- starch blends using Amylase-producing vibrios. *International Journal of Polymeric Materials*, 58: 257-26.
- Zhang, S., Wang, W., Wang, H., Qi, W., Yue, L., and Ye, Q. (2014). Synthesis and characterisation of starch grafted superabsorbent via 10MeV electron-beam irradiation. *Carbohydrate polymers*, 101, 798-803.