WHAT IS CLAIMED IS:

1. A method for producing aspartic acid or glutamic acid comprising:

saccharifying a reduced recalcitrance lignocellulosic and/or cellulosic material with one or more enzymes to obtain a saccharified biomass sugar solution comprising a mixture of sugars;

selectively fermenting one sugar in the mixture of sugars with one or more microorganisms to produce aspartic acid or glutamic acid.

2. The method of claim 1 further comprising converting the aspartic acid or glutamic acid to an oligomer, polymer or polymer derivative.

3. The method of claim 1 wherein a feedstock is pretreated with at least one of irradiation, sonication, oxidation, mechanical size reduction, pyrolysis and steam explosion to produce the reduced recalcitrance lignocellulosic and/or cellulosic material.

4. The method of claim 3 wherein irradiation is performed with an electron beam.

5. The method of claim 2 wherein converting the aspartic acid or glutamic acid to the product comprises chemically converting, e.g., converting aspartic acid to a polyamide.

6. The method of claim 2 wherein converting comprises biochemically converting, e.g., converting aspartic acid to a polyamide.

7. The method of claim 5 wherein chemically converting is selected from the group consisting of polymerization, isomerization, esterification, amidation, cyclization, oxidation, reduction, disproportionation, phosgenation, and combinations thereof.

8. The method of any one of the above claims wherein the sugars in the mixture of sugars comprise one or more of glucose, xylose, sucrose, maltose, lactose, mannose, galactose, arabinose and mixtures of these dimers of these such as cellobiose, heterodimers of these oligomers of these, and mixtures of these.

9. The method of any one of claim 8 further comprising purifying the one or more sugars (e.g., electrodialysis, distillation, centrifugation, filtration, ion exchange).

10. The method of claim 5 wherein converting comprises polymerizing the aspartic acid or glutamic acid to a polymer.

11. The method of claim 10 wherein a polymerizing method is selected from the group consisting of direct condensation of the aspartic acid or glutamic acid, azeotropic condensation of the aspartic acid or glutamic acid, and cyclization of the aspartic acid or glutamic acid followed by ring opening polymerization.

12. The method of claim 10 or 11 wherein the polymerizing further comprises coupling agents and/or chain extenders.

13. The method of claim 12 wherein the coupling agents and/or chain extenders are selected from the group consisting of phosgene, triphosgene, carbonyl diimidazole, dicyclohexylcarbodiimide, isocyanate, acid chlorides, acid anhydrides, epoxides, thiirane, oxazoline, orthoester, and combinations of these.

14. The method of claim 13 wherein the polymerization method is azeotropic condensation.

15. The method of any one of claim 10-14 further comprising the utilization of catalysts and/or promoters selected from the group consisting of protonic acids, H_3PO_4, H_2SO_4, methane sulfonic acid, p-toluene sulfonic acid, supported sulfonic acid, metals, Mg, Al, Ti, Zn, Sn, metal oxides, TiO_2, ZnO, GeO_2, ZrO_2, SnO, SnO_2, Sb_2O_3, metal halides, $ZnCl_2$, $SnCl_2$, $SnCl_4$, $Mn(AcO)_2$, $Fe_2(LA)_3$, $Co(AcO)_2$, $Ni(AcO)_2$, $Cu(OA)_2$, $Zn(LA)_2$, $Y(OA)_3$, $Al(i\text{-}Pr0)_3$, $Ti(Bu0)_4$, $TiO(acac)_2$, $(Bu)_2SnO$ and combinations of these.

16. The method of any one of claims 10 or 15 further comprising conducting at least a portion of the polymerization at a temperature between about 100 and 240° C.

17. The method of any one of claims 10 through 16 further comprising conducting

at least a portion of the polymerization under vacuum (e.g., between about 0.0001 torr to 300 torr).

18. The method of claim 11 wherein the polymerization method includes cyclizing the aspartic acid or glutamic acid followed by ring opening.

19. The method of any one of claims 10 through 17 wherein converting further includes blending the polymer with a second polymer.

20. The method of claim 19 wherein the second polymer is selected from the group consisting of polyglycols, polyvinyl acetate, polyolefins, styrenic resins, polyacetals, poly(meth)acrylates, polycarbonate, polybutylene succinate, elastomers, polyurethanes, natural rubber, polybutadiene, neoprene, silicone, and combinations of these.

21. The method of claim 1 where the aspartic acid or glutamic acid amine group is reacted with a protecting group to form a protected aspartic acid or glutamic acid.

22. The method of any one of claims 10 through 20 further comprising co-polymerizing the aspartic acid or glutamic acid or the protected aspartic acid or glutamic acid with a monomer.

23. The method of claim 22 wherein the monomer is selected from the group consisting of elastomeric units, lactones, carbonates, morpholinediones, epoxides, 1,4- benzodioxepin-2,5-(3H)-dione Glycosalicylide, 1,4-benzodioxepin-2,5-(3H, 3- methyl)-dione Lactosalicylide, dibenzo-1,5 dioxacin-6-12-dione disalicylide, morpholine-2,5-dione, 1,4-dioxane-2,5-dione glycolide, oxepane-2-one ε- caprolactone, 1,3-dioxane-2-one trimethylene carconate, 2,2-dimethyltrimethylene carbonate, 1,5-dioxepane-2-one, 1,4-dioxane-2-one p-dioxanone, gamma-butyrolactone, beta-butyrolactone, beta-Me-delta-valerolactone, 1,4-dioxane-2,3- dione ethylene oxalate, 3-[benzyloxycarbonyl methyl]-1,4-dioxane-2,5-dione, ethylene oxide, propylene oxide, 5,5'(oxepane-2-one), 2,4,7,9-tetraoxaspiro[5,5]undecane-3,8-dione Spiro-bid-dimethylene caronate, diols and diamines and mixtures of these.

24. The method of any one of claims 10 through 23 further comprising combining the polymer with fillers.

25. The method of claim 24 wherein the filler is selected from the group consisting of silicates, layered silicates, polymer and organically modified layered silicate, synthetic mica, carbon, carbon fibers, glass fibers, boric acid, talc, montmorillonite, clay, starch, corn starch, wheat starch, cellulose fibers, paper, rayon, non-woven fibers, wood flours, whiskers of potassium titanate, whiskers of aluminum borate, 4,4'-thiodiphenol, glycerol and combinations of these.

26. The method of claim 24 or 25 wherein combining further includes extrusion and/or compression molding.

27. The method of any one of claims 10 through 26 further comprising cross linking the polymer.

28. The method of claim 27 wherein a cross linking agent is utilized to cross link the polymer and the cross-linking agent selected from the group consisting of 5,5'- bis(oxepane-2-one)(bis- E -caprolactone)), spiro-bis-dimethylene carbonate, peroxides, dicumyl peroxide, a,a'-bis(tert- butylperoxy)-diisopropylbenzene benzoyl peroxide, unsaturated alcohols, hydroxyethyl methacrylate, 2-butene-1,4-diol, unsaturated anhydrides, maleic anhydride, saturated epoxides, glycidyl methacrylate, irradiation and combinations of these.

29. The method of any one of claims 10 through 28 further comprising processing the polymer by a method selected from injection molding, blow molding and thermoforming.

30. The method of any one of claims 10 through 29 further comprising combining the polymer with a dye.

31. The method of claim 30 wherein the dye is selected from the group consisting of blue 3, blue 356, brown 1, orange 29, violet 26, violet 93, yellow 42, yellow 54, yellow 82 and combinations of these.

32. The method of any one of claims 10 through 31 further comprising combining the polymer with a fragrance.

33. The method of claim 32 wherein the fragrance is selected from the group consisting of wood, evergreen, redwood, peppermint, cherry, strawberry, peach, lime, spearmint, cinnamon, anise, basil, bergamot, black pepper, camphor, chamomile, citronella, eucalyptus, pine, fir, geranium, ginger, grapefruit, jasmine, juniper berry, lavender, lemon, mandarin, marjoram, musk, myrrh, orange, patchouli, rose, rosemary, sage, sandalwood, tea tree, thyme, wintergreen, ylang ylang, vanilla, new car or mixtures of these fragrances.

34. The method of claims 32 or 33 wherein the fragrances are combined with the polymer in an amount between about 0.005 % by weight and about 20 % by weight (e.g., between about 0.1 % and about 5 wt. %, between about 0.25 wt.% and about 2.5 %.

35. The method of any one of claims 10 through 34 wherein converting further includes blending the polymer with a plasticizer.

36. The method of claim 35 wherein plasticizer is selected from the group consisting of triacetine, tributyl citrate, polyethylene glycol, fully acetylated monoglyceride based on fully hydrogenated castor oil, glycerine and acetic acid, diethyl bishydroxymethyl malonate and mixtures of these.

37. The method of any one of claims 10 through 36 further comprising grafting a molecule to the polymer.

38. The method of claim 37 wherein the molecule is selected from a monomer or a polymer.

39. The method of claim 37 or 38 further including treating the polymer with a peroxide, heating above about 120°C, irradiation and combinations thereof.

40. The method of any one of claims 10 through 39 further comprising shaping, molding, carving, extruding and/or assembling the polymer into the product.

41. The method of any one of claims 10 through 40 wherein the product is selected

from the group consisting of personal care items, tissues, towels, diapers, green packaging, compostable pots, consumer electronics, laptop casings, mobile phone casings, appliances, food packaging, disposable packaging, food containers, drink bottles, garbage bags, waste compostable bags, mulch films, controlled release matrices, controlled release containers, containers for fertilizers, containers for pesticides, containers for herbicides, containers for nutrients, containers for pharmaceuticals, containers for flavoring agents, containers for foods, shopping bags, general purpose film, high heat film, heat seal layer, surface coating, disposable tableware, plates, cups, forks, knives, spoons, sporks, bowls, automotive parts, panels, fabrics, under hood covers, carpet fibers, clothing fibers, fibers for garments, fibers for sportswear, fibers for footwear, surgical sutures, implants, scaffolding and drug delivery systems.

42. The method of any one of claims 10 through 40 wherein the product is selected from flavor enhancer, coatings, dispersants, superabsorbent, drug delivery systems, plant growth, metal chelator, waste water treatment, water treatment, and automotive additives.