What is claimed is:

1. Chromatography media comprising high surface area fibers having a cross-section comprising a region comprising a main body region defining a substantially longitudinal axis, and a plurality of projections extending radially outwardly from said main body region, said fibers having imparted thereon functionality enabling a chromatography selected from the group consisting of ion-exchange chromatography, hydrophobic interaction chromatography, and affinity chromatography.
2. The media of claim 1, wherein said functionality is cation-exchange functionality.
3. The media of claim 1, wherein said functionality is anion-exchange functionality.
4. The media of claim 1, wherein said functionality comprises acrylic polymer functionality.
5. The media of claim 1, wherein the surface of said fibers is modified with pendant sulfopropyl groups.
6. The media of claim 1, wherein the surface of said fibers is modified with pendant trimethylammonium groups.
7. The media of claim 1, wherein said functionality is grafted to said fibers.
8. The media of claim 1, wherein said fibers have a surface area of about 15 square meters per gram.

9. A non-woven bed of high surface area fibers having a cross-section comprising a main body region defining a substantially longitudinal axis, and having a plurality of projections extending radially outwardly from said main body region, said fibers having imparted thereon functionality enabling a chromatography selected from the group consisting of ion-exchange functionality, hydrophobic interaction, and affinity chromatography.

10. A housing comprising a packed bed of loose or fused cut fibers having a cross-section comprising a main body region defining a substantially longitudinal axis, and having a plurality of projections extending radially outwardly from said main body region, said fibers having imparted thereon functionality enabling a chromatography selected from the group consisting of ion-exchange functionality, hydrophobic interaction, and affinity chromatography.

11. A process for purifying a sample comprising a biomolecule, comprising contacting said sample with a bed of fiber media, said fibers having a cross-section comprising a main body region defining a substantially longitudinal axis, and having a plurality of projections extending radially outwardly from said main body region, said fibers having imparted thereon functionality enabling a chromatography

selected from the group consisting of ion-exchange functionality, hydrophobic interaction, and affinity chromatography.

12. The process of claim 11, wherein said functionality enables purification in a flow through mode.

13. The process of claim 11, wherein said functionality enables purification in a bind/elute mode.

14. The process of claim 11, wherein said ion-exchange functionality is cation exchange functionality, and wherein said purification is carried out at a pH ranging from 5 to 8.

15. A process for purifying proteins, comprising;

providing a protein mixture,

contacting said protein mixture with a low density bed of media having a cross-section comprising a main body region defining a substantially longitudinal axis, and having a plurality of projections extending radially outwardly from said main body region, said fibers having imparted thereon functionality enabling a chromatography selected from the group consisting of ion-exchange functionality, hydrophobic interaction, and affinity chromatography,

washing said fiber media to remove unbound species,

compressing said fiber media, and

washing said compressed fiber media to extract bound

protein.

CLAIMS

1. A process for purifying a sample comprising a biomolecule, comprising contacting said sample with a bed of fiber media, said fibers having a cross-section comprising a body region defining a substantially longitudinal axis, and having a plurality of projections extending outwardly from said body region, said fibers having imparted thereon functionality enabling ion-exchange chromatography.
2. The process of claim 1, wherein said functionality enables purification in a flow through mode.
3. The process of claim 1, wherein said functionality enables purification in a bind/elute mode.
4. The process of claim 1, wherein said ion-exchange functionality is cation exchange functionality, and wherein said purification is carried out at a pH ranging from 5 to 8.
5. A process of purifying a sample comprising a biomolecule of interest and impurities, comprising:

   providing a sample comprising the biomolecule of interest and impurities;

   contacting said sample with a chromatography media comprising fibers having a cross-section comprising a

region comprising a body region defining a substantially longitudinal axis, and a plurality of projections extending outwardly from said body region, said fibers having imparted thereon anion-exchange functionality, acrylic polymer functionality or cation-exchange functionality thereby to bind the biomolecule of interest or impurities; and

recovering the biomolecule of interest.

6. The process of claim 5, wherein the biomolecule of interest is bound to the chromatography media, and is recovered by elution.

7. The process of claim 5, wherein impurities are bound to the chromatography media, and the biomolecule of interest is recovered in a flow-through mode.

8. Chromatography media comprising fibers having a cross-section comprising a region comprising a body region defining a substantially longitudinal axis, and a plurality of projections extending outwardly from said body region, said fibers having imparted thereon acrylamide polymer functionality.

9. The process of claim 1, wherein said biomolecule comprises a monoclonal antibody.

10. The process of claim 5, wherein said biomolecule comprises a monoclonal antibody.

11. A process for purifying a virus, comprising contacting a sample containing said virus with a bed of fiber media, said fibers having a cross-section comprising a body region defining a substantially longitudinal axis, and having a plurality of projections extending outwardly from said body region, said fibers having imparted thereon functionality enabling ion-exchange chromatography, washing said fibers to remove unbound species, and eluting said virus.

12. A process for removing a virus from a sample, comprising contacting said sample containing said virus with a bed of fiber media, said fibers having a cross-section comprising a body region defining a substantially longitudinal axis, and having a plurality of projections extending outwardly from said body region, said fibers having imparted thereon functionality enabling ion-exchange chromatography.