31. The method of claim 21, wherein the splitting forms porous silicon particles comprising diameters from about 1 μm to about 50 μm.

32. The method of claim 21, wherein the splitting occurs by at least one of physical grinding, crushing, sonication, ultrasonic fracture, pulverization, ultrasonic pulverization, and combinations thereof.

33. The method of claim 21, wherein the formed porous silicon particle comprises a plurality of pores, wherein the plurality of pores comprise diameters between about 1 nanometer to about 5 micrometers.

34. The method of claim 33, wherein the plurality of pores comprise diameters between about 500 nanometers to about 3 micrometers.

35. An anode material for lithium ion batteries, wherein the anode material comprises

a porous silicon film comprising a plurality of pores; and

a binding material associated with the porous silicon film, wherein the binding material is selected from the group consisting of binders, carbon materials, polymers, metals, additives, and combinations thereof.

36. The anode material of claim 35, wherein the plurality of pores comprise diameters between about 1 nanometer to about 5 micrometers.

37. The anode material of claim 36, wherein the plurality of pores comprise diameters between about 500 nanometers to about 3 micrometers.

38. The anode material of claim 35, wherein the porous silicon film is coated with the binding material.

39. The anode material of claim 35, wherein the binding material comprises carbonized polyacrylonitrile.

40. The anode material of claim 35, wherein the formed porous silicon film has a thickness ranging from about 10 micrometers to about 200 micrometers.

41. The anode material of claim 35, wherein the porous silicon film comprises pores that span at least 50% of a thickness of the porous silicon film.

42. The anode material of claim 35, wherein the porous silicon film comprises pores that span an entire thickness of the porous silicon film.

43. The anode material of claim 35, wherein the anode material has a capacity of at least about 600 mAh/g, and a coulombic efficiency of at least about 90%.

44. An anode material for lithium ion batteries, wherein the anode material comprises

porous silicon particles comprising a plurality of pores; and

a binding material associated with the porous silicon particles, wherein the binding material is selected from the group consisting of binders, carbon materials, polymers, metals, additives, and combinations thereof.

45. The anode material of claim 44, wherein the plurality of pores comprise diameters between about 1 nanometer to about 5 micrometers.

46. The anode material of claim 44, wherein the plurality of pores comprise diameters between about 500 nanometer to about 3 micrometers.

47. The anode material of claim 44, wherein the binding material comprises carbonized polyacrylonitrile.

48. The anode material of claim 44, wherein the porous silicon particles comprise diameters that range from about 1 μm to about 50 μm.

49. The anode material of claim 44, wherein the anode material has a capacity of at least about 600 mAh/g, and a coulombic efficiency of at least about 90%.