CLAIMS:

1. A method of chemical-mechanical processing a nickel-phosphorus surface by a bulk removal step, the method comprising:

providing a substrate having a nickel-phosphorus surface;

providing bulk slurry comprising bulk slurry abrasive particles dispersed in liquid carrier, the bulk slurry abrasive particles comprising, as bulk slurry primary abrasive particles, silica abrasive particles having an average particle size of not greater than 100 nanometers;

providing a polishing pad in contact with a platen,

in the bulk removal step, contacting the substrate surface with the polishing pad and the bulk slurry, with motion therebetween, to remove material from the substrate surface and provide a bulk-processed surface of the substrate,

providing polishing slurry comprising polishing slurry abrasive particles dispersed in liquid carrier, the polishing slurry abrasive particles comprising, as polishing slurry primary abrasive particles, the polishing slurry primary abrasive particles are irregularly-shaped and have an average particle size of not greater than 60 nanometers,

in a polishing step, contacting the bulk-processed surface with the polishing pad used in the bulk removal step and the polishing slurry, with motion therebetween, to remove nickel-phosphorus material from the surface to produce a polished surface, wherein, after the bulk removal step and before the polishing step, the method does not include a step of rinsing the substrate surface.

2. The method of claim 1 wherein the bulk slurry abrasive particles include at least 95 weight percent silica abrasive particles having an average particle size of not greater than 100 nanometers, based on total weight abrasive particles in the bulk slurry.

3. The method of claim 1 wherein the bulk slurry abrasive particles consist essentially of the silica abrasive particles having an average particle size of not greater than 100 nanometers.

4. The method of claim 1 wherein the silica abrasive particles are colloidal silica particles.

5. The method of claim 1 wherein the bulk slurry primary abrasive particles are spherical particles having an average particle size of not greater than 90 nanometers.

6. The method of claim 1 wherein the bulk slurry abrasive particles comprise bulk slurry secondary abrasive particles that are irregular-shaped and have an average particle size of not greater than 60 nanometers.

7. The method of claim 1 wherein the bulk slurry primary abrasive particles are irregular-shaped and have an average particle size of not greater than 60 nanometers.

8. The method of claim 1 wherein a rate of removal of the nickel-phosphorus material from the surface during the polishing step is less than a rate of removal of the nickel-phosphorus material from the substrate during the bulk removal step.