

Claims

1. A polishing article, comprising:
 - a composite pad body comprising:
 - a plurality of polishing features forming a polishing surface, wherein the plurality of polishing features are formed from a first polymer material and each of the plurality of polishing features are separated by a groove; and
 - one or more base features formed from a second polymer material, wherein the one or more base features surround the plurality of polishing features to form a unitary body and the first polymer material has a hardness greater than a hardness of the second polymer material.
2. The polishing article of claim 1, wherein the first polymer material has a different reactivity with electromagnetic energy when compared with the second polymer material.
3. The polishing article of claim 1, wherein the second polymer material is a polymer matrix and the first polymer material comprises a plurality of microelements that are dispersed in the first polymer material.
4. The polishing article of claim 3, wherein a portion of the microelements further comprise a metallic material, a ceramic material, or combinations thereof.
5. The polishing article of claim 3, wherein each of the microelements include a mean diameter of about 150 microns to about 10 microns, or less.
6. The polishing article of claim 1, wherein the composite pad body is disposed on a base film.
7. The polishing article of claim 6, wherein the base film is transparent to electromagnetic energy.

8. A replacement supply roll for a chemical mechanical polishing process, comprising:
- a rod having a polishing article wound thereon, the polishing article comprising:
 - a composite pad body, comprising:
 - a plurality of polishing features forming a polishing surface, wherein the plurality of polishing features are formed from a first polymer material and each of the plurality of polishing features are separated by a groove; and
 - one or more base features formed from a second polymer material, wherein the one or more base features surround the plurality of polishing features to form a unitary body and the first polymer material has a hardness greater than a hardness of the second polymer material.
9. The supply roll of claim 8, wherein the first polymer material has a different reactivity with electromagnetic energy when compared with the second polymer material.
10. The supply roll of claim 8, wherein the second polymer material is a polymer matrix and the first polymer material comprises a plurality of microelements that are dispersed in the first polymer material.
11. The supply roll of claim 10, wherein a portion of the microelements further comprise a metallic material, a ceramic material, or combinations thereof.
12. The supply roll of claim 10, wherein each of the microelements include a mean diameter of about 150 microns to about 10 microns, or less.
13. The supply roll of claim 8, wherein the composite pad body is disposed on a base film that is transparent to electromagnetic energy.

14. A polishing article, comprising:

a composite pad body comprising:

a base material layer comprising a polymer material; and

a plurality of polishing features extending from the base material layer and forming a polishing surface, wherein the plurality of polishing features comprise a polymer material having a hardness greater than a hardness of the base material layer, wherein each of the plurality of polishing features is separated by a groove.

15. The polishing article of claim 14, wherein the first polymer material has a different reactivity with electromagnetic energy when compared with the second polymer material.

16. The polishing article of claim 14, wherein the second polymer material is a polymer matrix and the first polymer material comprises a plurality of microelements that are dispersed in the first polymer material.

17. The polishing article of claim 16, wherein a portion of the microelements further comprise a metallic material, a ceramic material, or combinations thereof.

18. The polishing article of claim 16, wherein each of the microelements include a mean diameter of about 150 microns to about 10 microns, or less.

19. The polishing article of claim 14, wherein a pitch of the polishing features varies across a radius of the composite pad body.