CLAIMS:

1. A method of preheating a polishing pad of a semiconductor wafer polishing system, the method comprising:

heating a fluid to a first predetermined temperature;

applying the fluid to the polishing pad; and

rotating the polishing pad such that the fluid covers the polishing pad, wherein the fluid increases a polishing pad temperature to a second predetermined temperature.

2. The method of claim 1, wherein the first predetermined temperature is calculated based on the second predetermined temperature and the polishing pad temperature.

3. The method of claim 1, wherein the polishing pad temperature is maintained between 42 °C and 43 °C.

4. The method of claim 1, wherein applying the fluid to the polishing pad includes channeling the first fluid to the polishing pad for a predetermined time, and wherein the method further comprises varying the predetermined time based on a measured temperature of the polishing pad.

5. The method of claim 1, wherein the fluid includes deionized water and is substantially free of silicon dioxide.

6. The method of claim 1, further comprising: using a heater to heat the fluid to the first predetermined

temperature; varying a flow rate of the fluid using a flow controller based on a measured temperature of the polishing pad; and varying a temperature of the fluid based on a measured temperature of the polishing pad.

7. A method of polishing a semiconductor wafer with a wafer polishing system, the wafer polishing system including a preheating system and a polishing head, the preheating system including a heater, the polishing head including a polishing pad, the method comprising:

heating a fluid to a first predetermined temperature with the heater;

applying the fluid to the polishing pad;

rotating the polishing pad such that the fluid covers the polishing pad, wherein the fluid increases a polishing pad temperature to a second predetermined temperature;

placing the wafer in the wafer polishing system; and

polishing the wafer with the polishing pad.

8. The method of claim 7, further comprising: channeling a second fluid to the polishing pad, wherein the second fluid comprises a slurry.

9. The method of claim 8, wherein friction between the polishing pad, the wafer, and the slurry maintains the polishing pad temperature at the second predetermined temperature.

10. A wafer polishing system for polishing a semiconductor wafer, the wafer polishing system comprising:

a polishing head comprising a polishing pad; and

a preheating system for preheating the polishing pad, the preheating system comprising a heater for heating a fluid to a first predetermined temperature, wherein the preheating system channels the fluid to the polishing pad, and the fluid raises a polishing pad temperature to a second predetermined temperature.

11. The wafer polishing system of claim 10, wherein the first predetermined temperature is calculated based on the second predetermined temperature and the polishing pad temperature.

12. The wafer polishing system of claim 10, wherein the polishing head comprises a plate attached to the polishing pad, the plate defines a fluid distribution tube for channeling the fluid from the preheating system to the polishing pad.

13. The wafer polishing system of claim 10, wherein the preheating system further comprises a polishing pad temperature sensor for measuring a polishing pad temperature.

14. The wafer polishing system of claim 10, wherein the preheating system further comprises a flow controller for controlling a flow rate of the fluid.