

6.781
HOMEWORK SET #8

30. Skim read the attached article: "The Evolution of Silicon Wafer Cleaning Technology", by Werner Kern, *J. Electrochem. Soc.* 137, 1887-92 (1990). What role does hydrogen peroxide play in the cleaning process?
31. Read the attached article "Megasonic Cleaning" by A.A. Busnaina and F. Dai, *Semiconductor International*, August 1997, p. 85-90. What are the advantages and virtues of megasonic cleaning. Please be brief.
32. In the Lecture 9 notes I gave the equation:

$$\delta A_{sl} \cos \theta = \delta A_{lv}$$

Prove that this is correct.

33. Read the attached article "Environmentally friendly single-wafer spin cleaning" by T. Hattori, *Solid State Technology*, Nov. 1999. Describe in a single paragraph how this proposed method of Si wafer cleaning differs from traditional approaches. Please be brief.

References

Problem 30

Kern, Werner. "The Evolution of Silicon Wafer Cleaning Technology." *J. Electrochem. Soc.* 137, no. 6 (1990): 1887-1892.

Problem 31

Busnaina, A. A., and F. Dai. "Megasonic Cleaning: Acoustic Streaming is Delivered to Small Particles to Maximize Particle Removal." *Semiconductor International* (August 1997): 85-90.

Problem 33

Hattori, Takeshi. "Environmentally Friendly Single-Wafer Spin Cleaning." *Solid State Technology* (November 1999): 73-76, 78, 80. □ □