

2021 Spring – SPC&O HW#9

1. Read the attached Chapter 4 and use the experimental results from Table 4.4(a), (b) to
 - (a) re-calculate the surface defect and thickness SN ratios and thickness mean using only Test Wafer 3 data (furnace zone 3).
 - (b) Plot factor effects on the surface defect SN ratio, thickness SN ratio and thickness mean using only Test Wafer 3 data.
 - (c) Identify possible control factors and scaling factors for the thickness.
 - (d) Suggest the optimal factor setting with results of (a) (b) and (c).
 - (e) Use the additive model to predict the results of the suggested optimal factor settings for the Wafer 3 (furnace zone 3).
 - (f) Re-do (a)-(e) for Test Wafer 1 (furnace zone 1) and compare and discuss the results.
2. Please find an orthogonal array suitable for an experiment for three 2-level factors and nine 3-level factors. Provide the experimental matrix.