ROCHESTER INSTITUTE OF TECHNOLOGY
MICROELECTRONIC ENGINEERING

Characteristic Curve for Photoresist Normalized Thickness vs Log Dose

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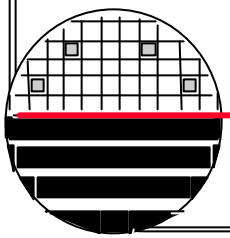

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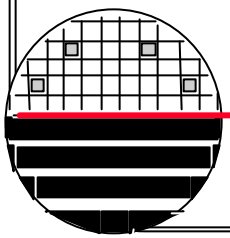
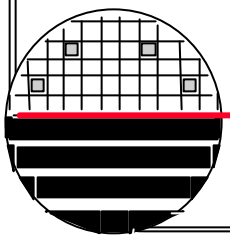
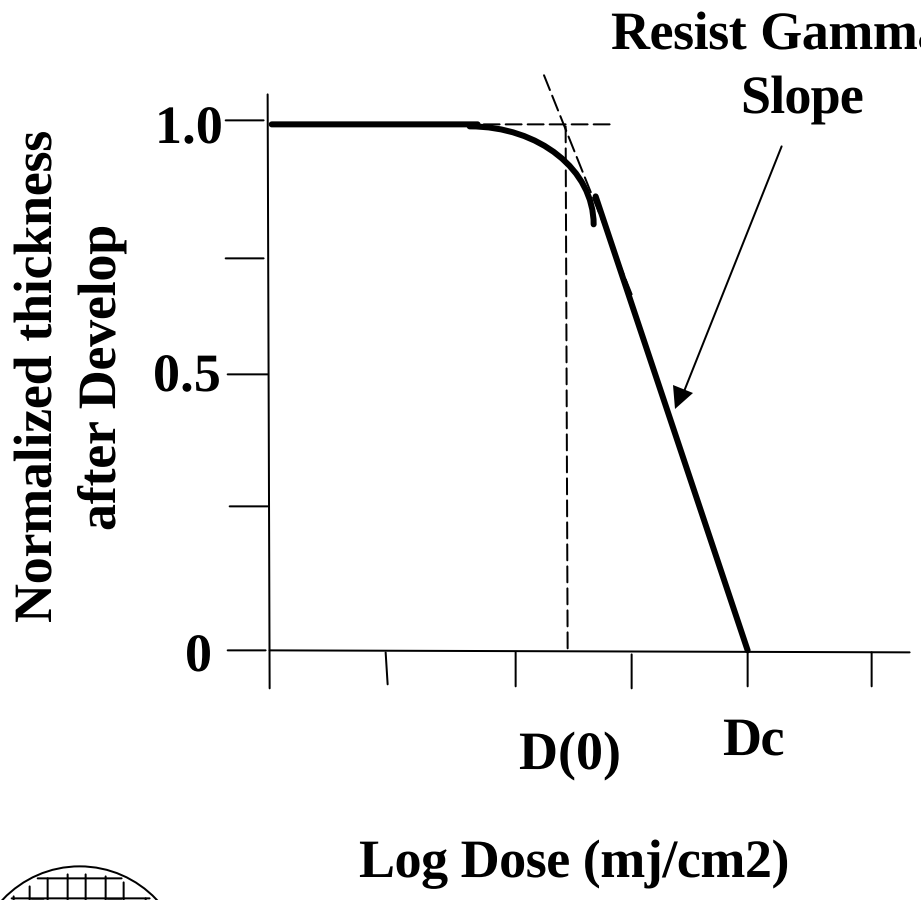


INTRODUCTION

The function of photoresist is given by the characteristic curve. The characteristic curve is the normalized thickness after develop versus Log exposure dose.



THICKNESS VERSUS LOG DOSE



Dc is the dose to clear
D(0) is the max dose for unexposed areas

The higher the slope or contrast, gamma, then the smaller the difference needs to be between exposure in areas to be cleared and areas to leave resist. That is the required airal image modulation is smaller.

GCA 6700 G-LINE STEPPER

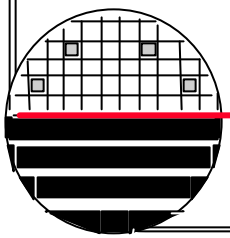
EXPERIMENT

Each 0.1 sec = 25 mj/cm2
On the GCA Stepper

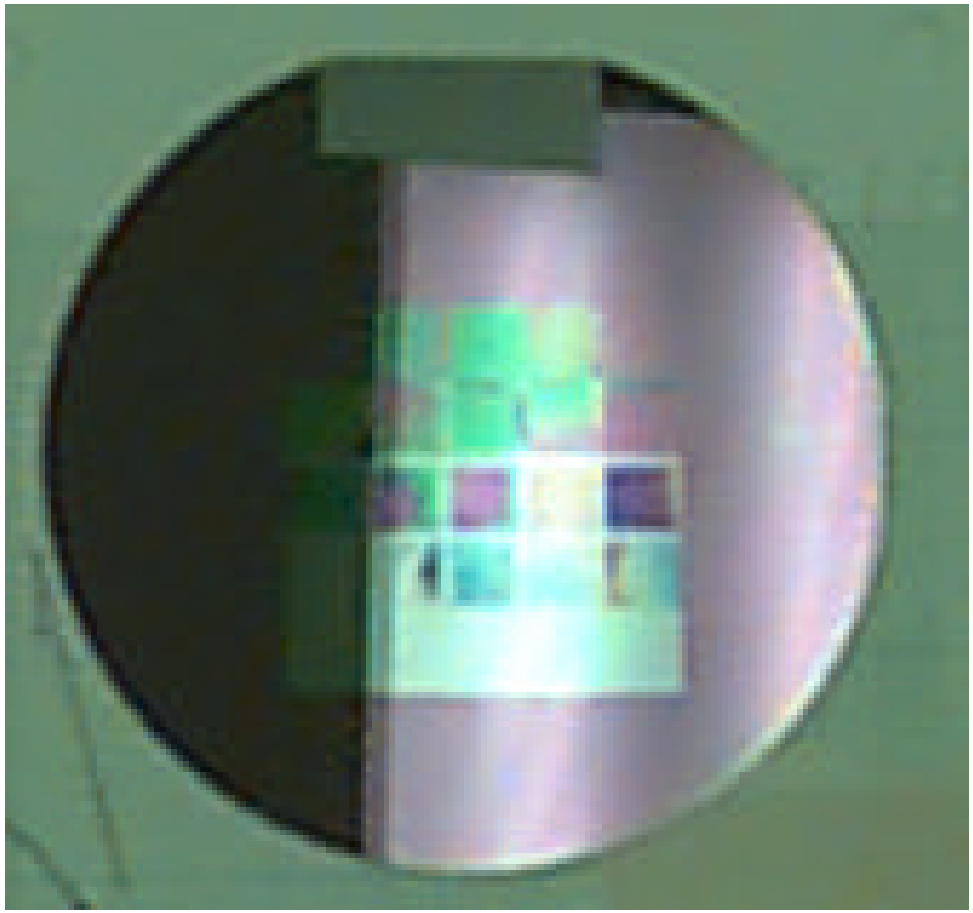
Time increment
= 0.02 seconds

0	5	10	15	20
45	40	35	30	25
50	55	60	65	70
95	90	85	80	75
100	105	110	115	120

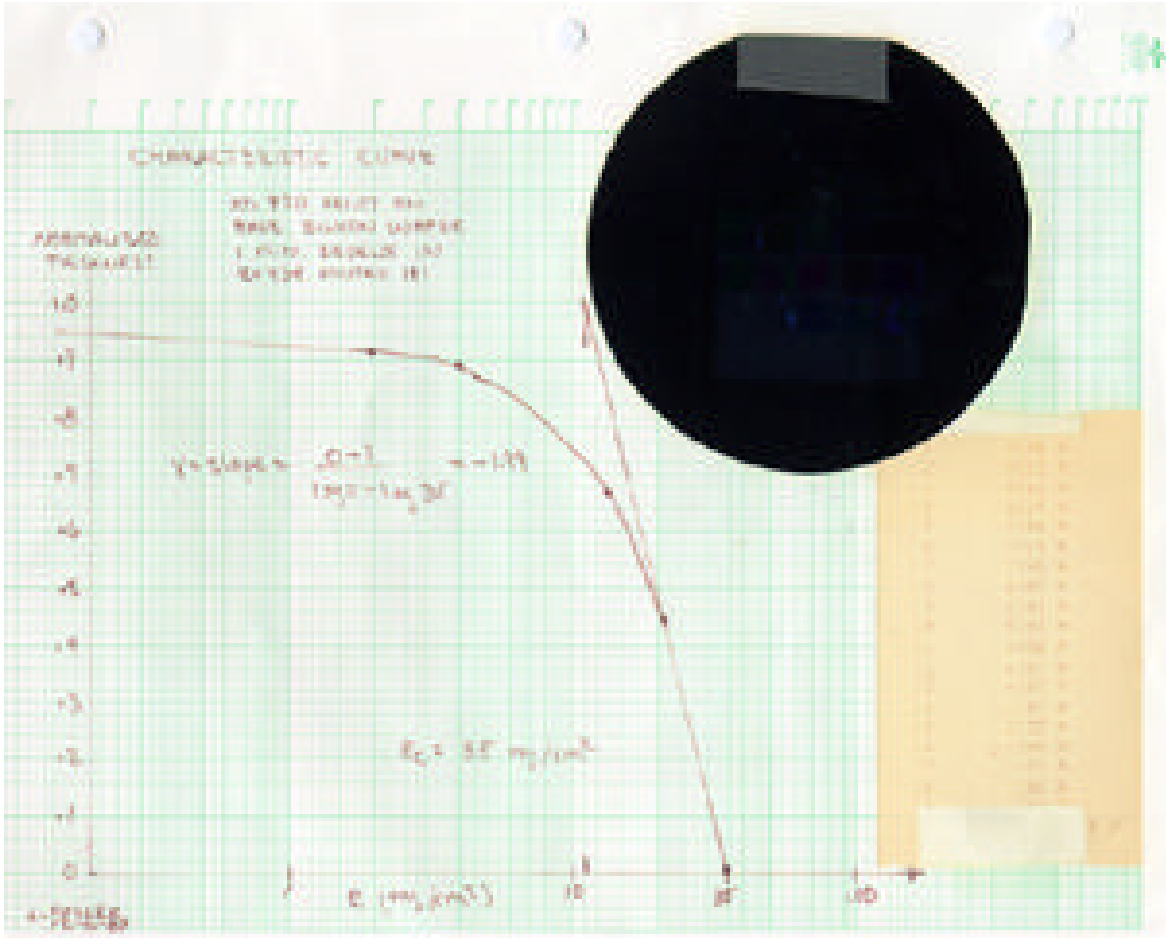
mj/cm2



EXPERIMENTAL WAFER



RESULTS



REFERENCES

1. Microlithography, Sheats and Smith