

# Si epitaxial growth and optical observation of the defects

(Semiconductor research institute)

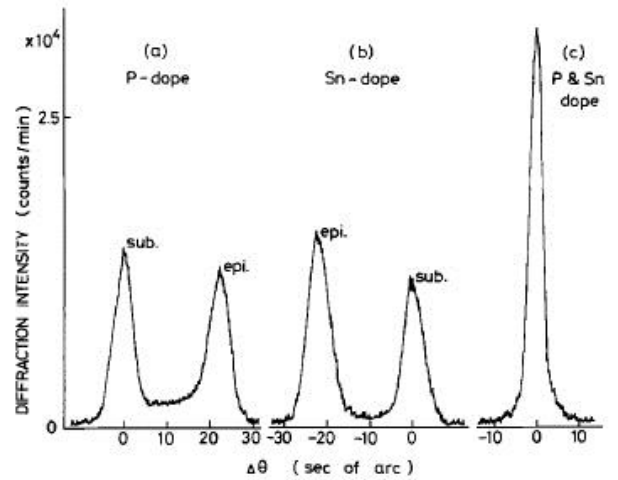
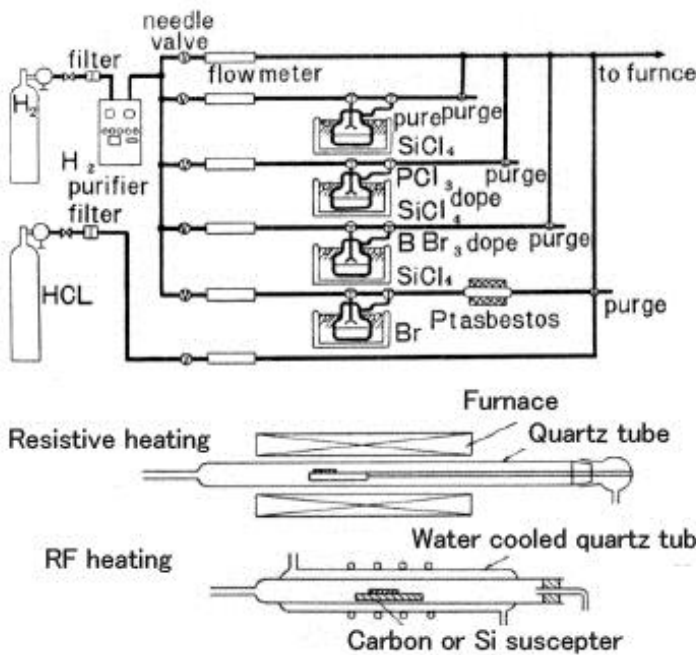


Fig. 10. X-ray rocking curves of  $\{511\}^v, -\{333\}^s$  for compensated specimens by simultaneous doping of tin and phosphorus. (a) Phosphorus doping;  $N_i = 4 \times 10^{19} \text{ atom/cm}^3$ ;  $t_f = 10\mu$ . (b) Tin doping;  $N_i = 2 \times 10^{19} \text{ atom/cm}^3$ ;  $t_f = 11.5\mu$ . (c) Simultaneous doping of tin with phosphorus, concentrations of phosphorus and tin are  $4 \times 10^{19} \text{ atom/cm}^3$  and  $2 \times 10^{19} \text{ atom/cm}^3$ , respectively;  $t_f = 16\mu$ .

## Si gas phase epitaxial growth system (displayed except furnace) Perfect Crystal Growth of Silicon by Vapor Deposition

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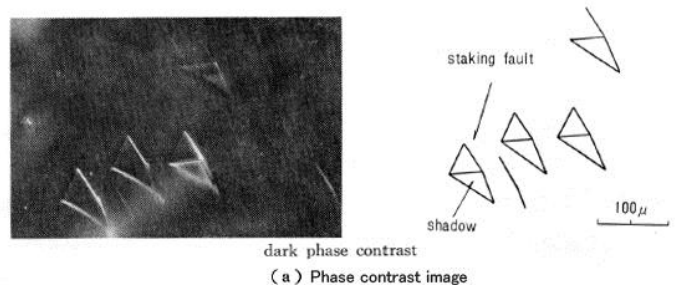
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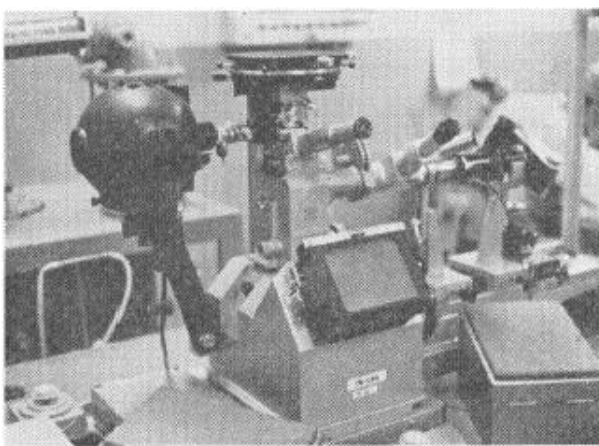
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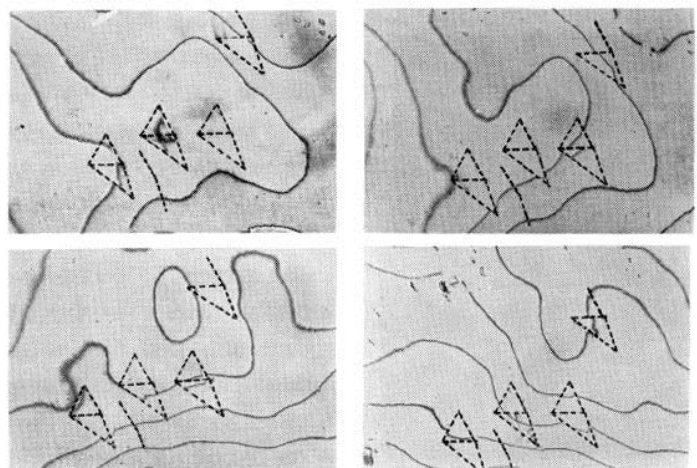


dark phase contrast

(a) Phase contrast image



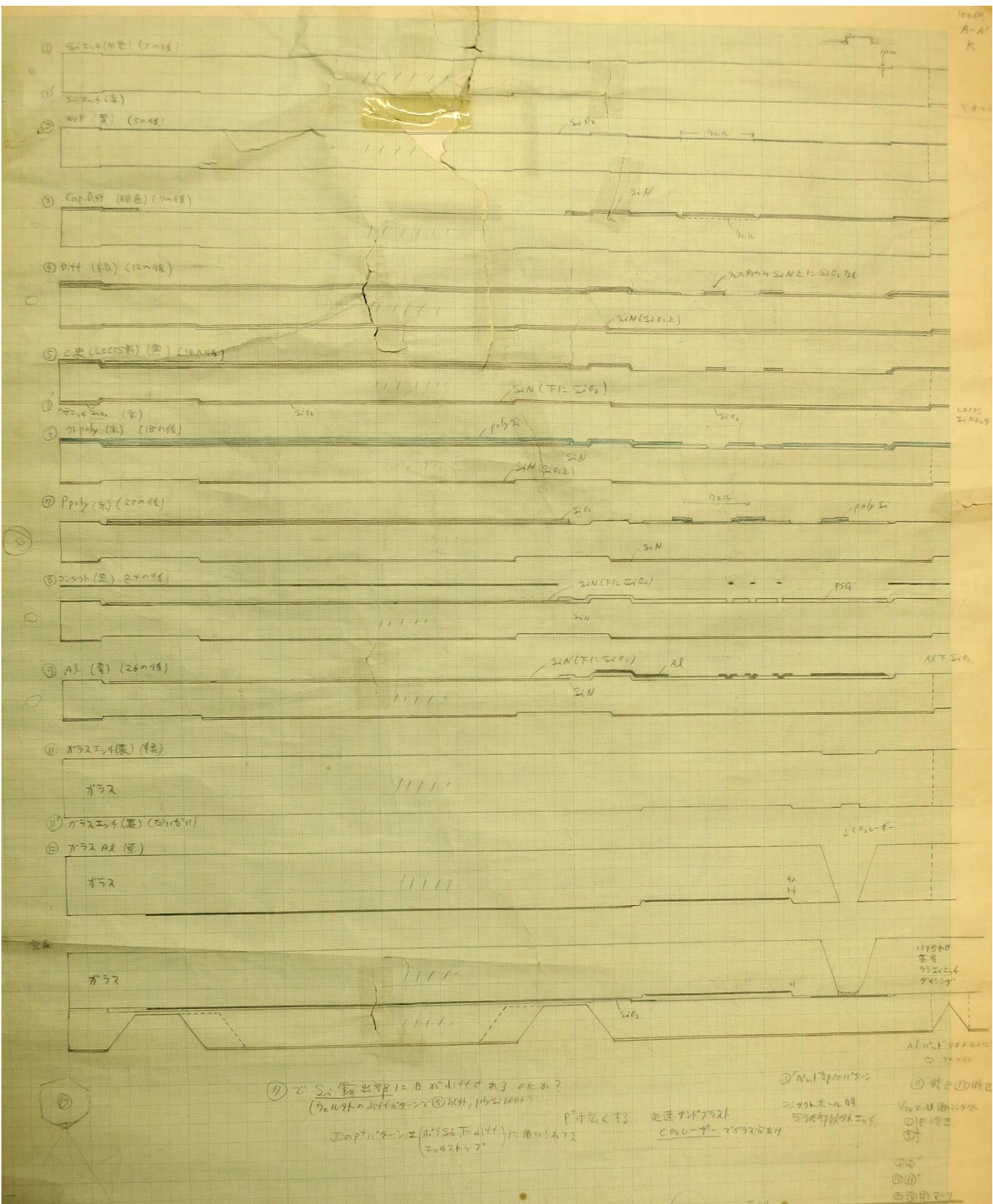
Multi-purpose metallurgical microscope (Reichert, MEF)



(b) Multiple reflection interference images (stacking faults are observed)

(displayed)

(K. Terasaki : 5.Optical observation of defects, Semiconductor research 7 (1971) Kogyo Chosakai)



正しいプロセスチャートの描き方  
(集積化容量型圧力センサの例)

Effective drawing of process chart  
(Integrated capacitive pressure sensor)

⑦で Si 露出部は B 系 diff ですか? (それ以外の diff は C 系, poly 以外)  
 ③のポリゲーションは (Al/SiO<sub>2</sub> Diff) に用いられた  
 P 系は 100nm 連続サロゲート  
 C 系は 100nm 連続サロゲート  
 ⑧のポリゲーションは 100nm 連続サロゲート  
 ⑨のポリゲーションは 100nm 連続サロゲート  
 ⑩のポリゲーションは 100nm 連続サロゲート  
 ⑪のポリゲーションは 100nm 連続サロゲート  
 ⑫のポリゲーションは 100nm 連続サロゲート  
 ⑬のポリゲーションは 100nm 連続サロゲート  
 ⑭のポリゲーションは 100nm 連続サロゲート  
 ⑮のポリゲーションは 100nm 連続サロゲート