Pictures Intended for the "Lost Book"

- Most of the pictures for the "lost book" had been selected and made ready for publications. Of course, quite a few were identical or similar to the pictures in the previous publications but there were also some new ones.
  - I give you what I still have. I do not have the pictures that my coauthor, friend and best man at our wedding, **T.S. Kuan** would have contributed. Some explanations are given in the Fig. captions.
  - Note: A lot of the pictures and graphics ended up in my Hyperscript "Defects". That is especially true for the stuff at then end of the book article..

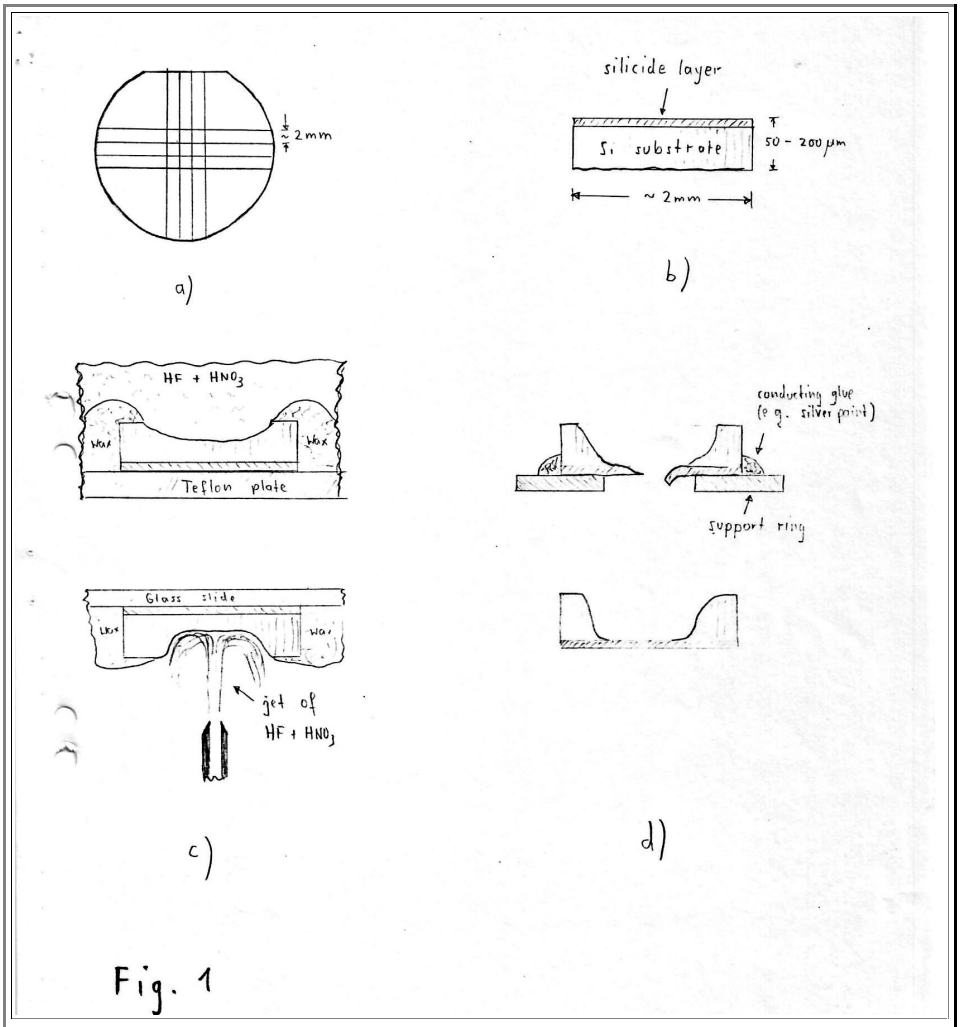


Fig. 1

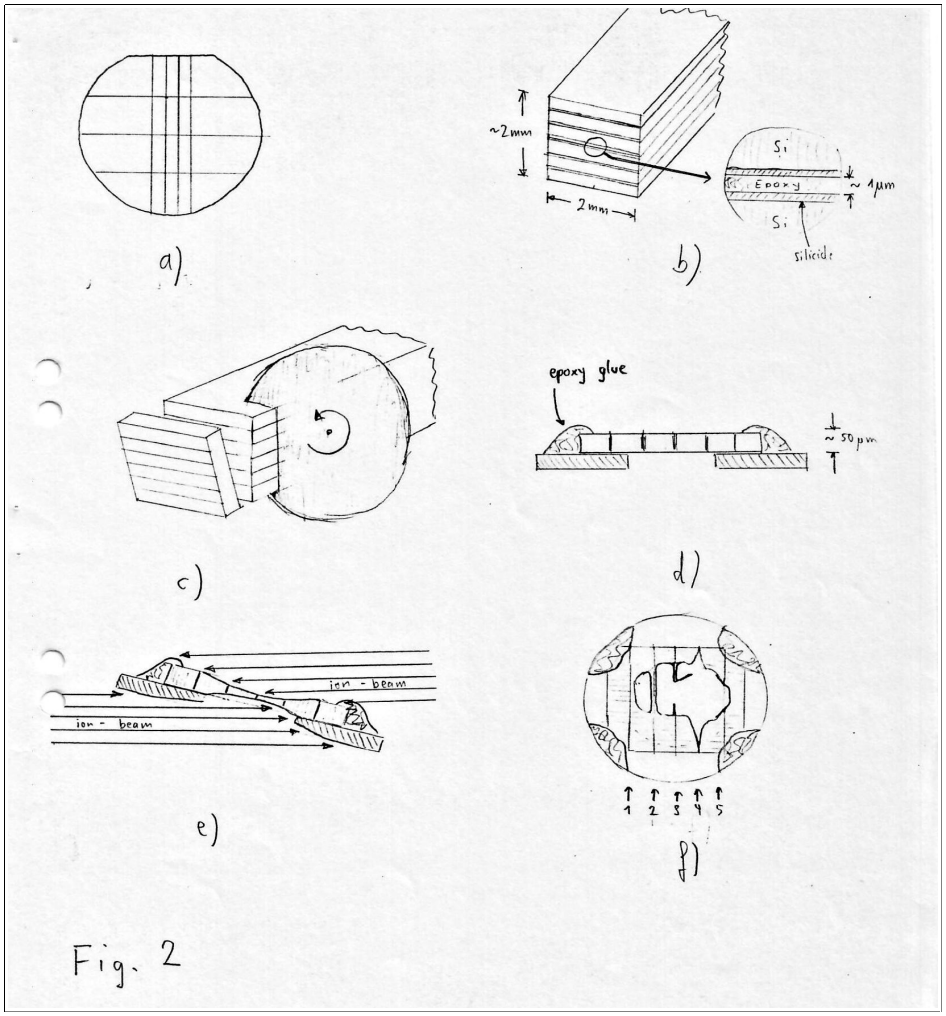


Fig. 1 and 2 in the "lost book"
The figures illustrate two points:
1. The intricacies of specimen preparation, especially for cross-secions and
2. The quaint old way to male a drawing. First some pencil sketches, than the hunt for somebody
who could – and was willing – to turn that into a nice drawing (by hand) on a drawing board.

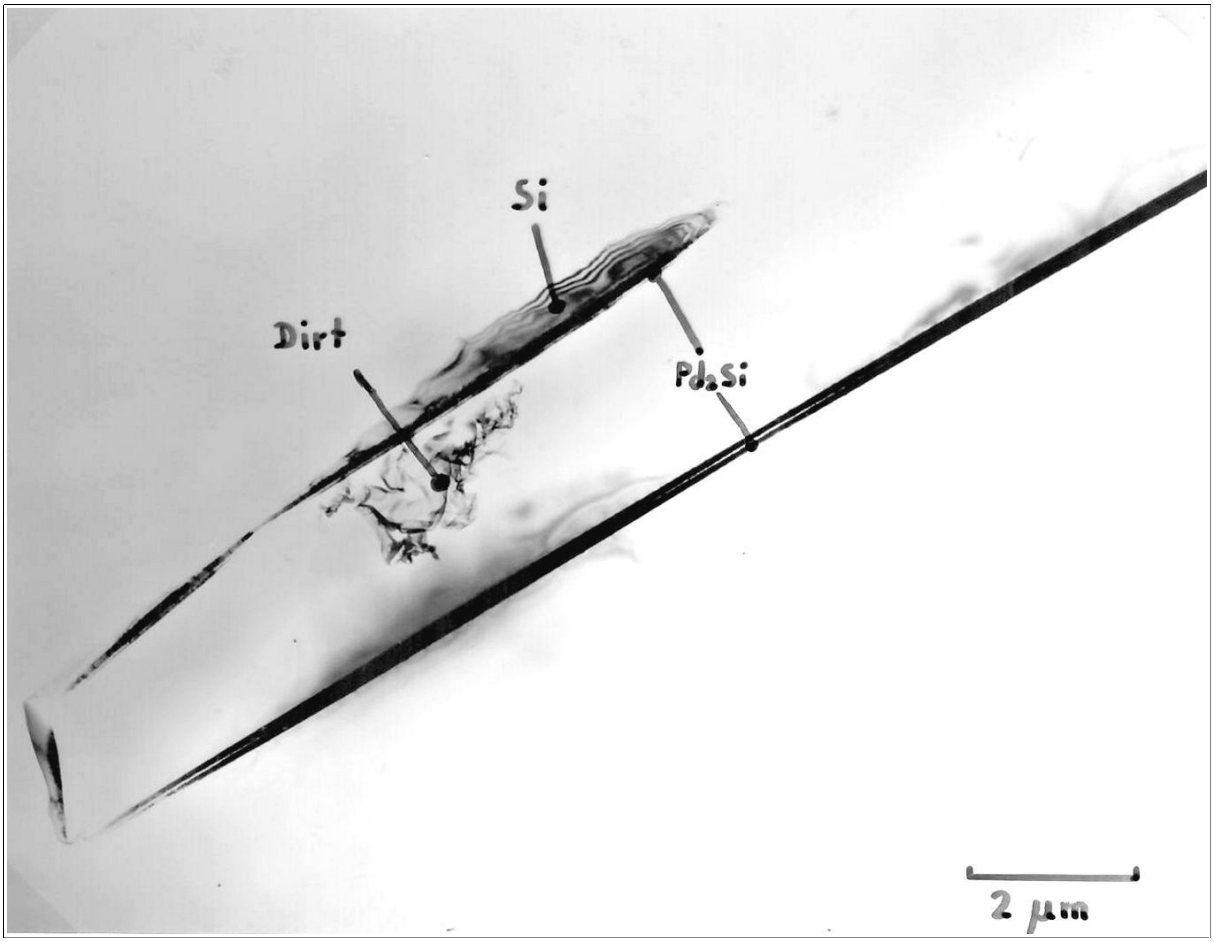


Fig. 3 in the "lost book"
For every good specimen, you got a few like this one. Everything has been milled off by the ion beam – except the interface.
Probably the epoxy became charged, deflecting the ion beam somewhat and thus lowering the milling rate right at the interface.
A useless specimen after rather long and dedicated work.

Figs. 4 - 8 are trivial or reserved. I continue with Fig. 9

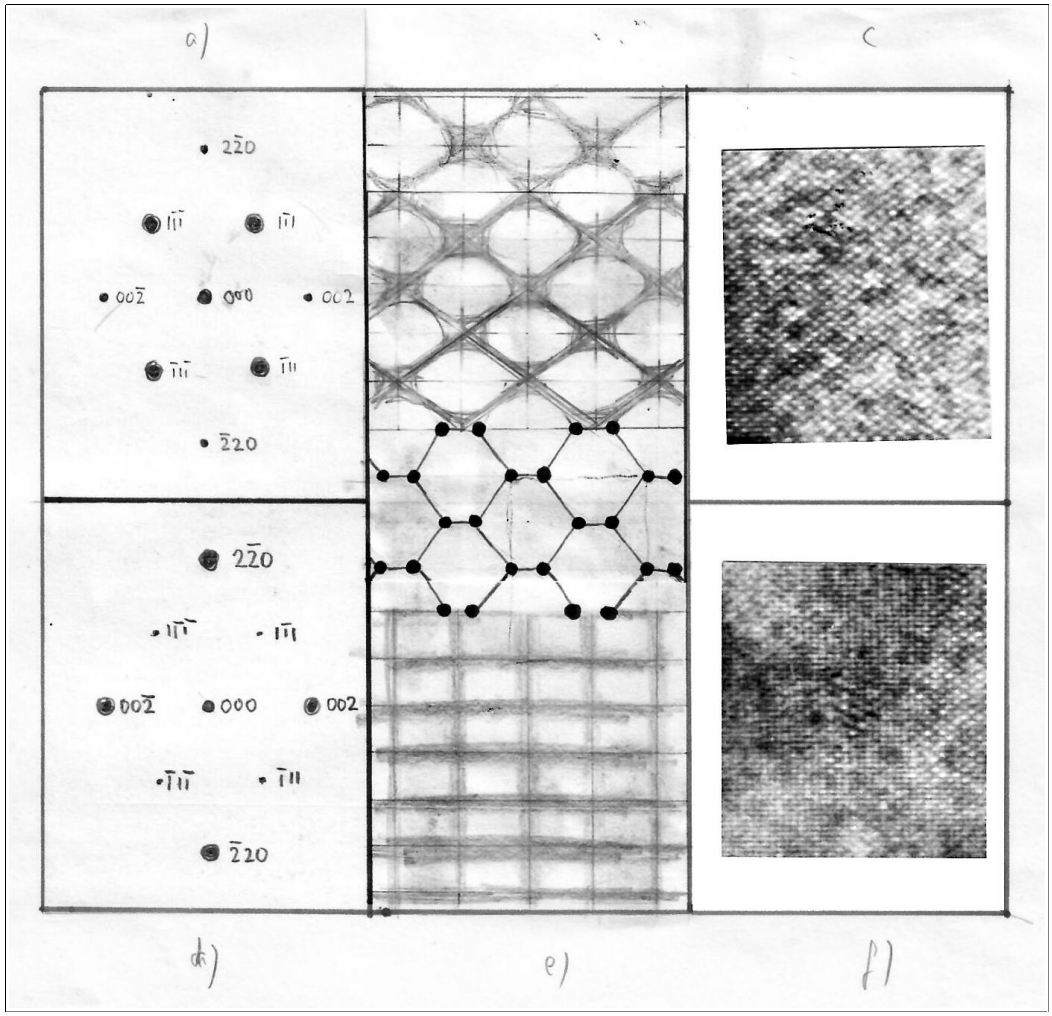


Fig. 9 in the "lost book"
This picture illustrates why the Si lattice can look quite different in HRTEM images but that you can still
interpret it directly – up to a point - without lengthy calculations. That was contrary to what the (few)
theoreticians claimed in the good old days of HRTEM

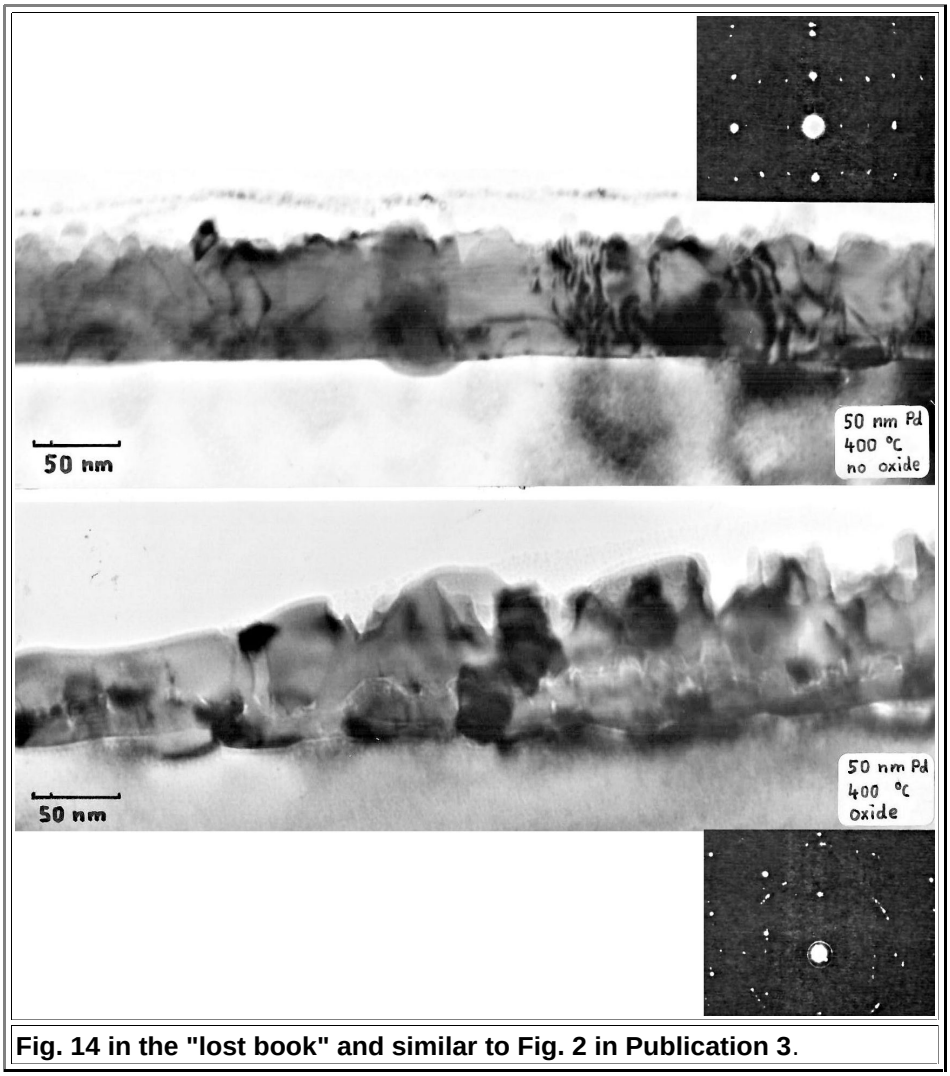


Fig. 14 in the "lost book" and similar to Fig. 2 in Publication 3.

Figs.10 - 14 concern Iridium silicide work of T.S. Kuan. I do not have these pictures.

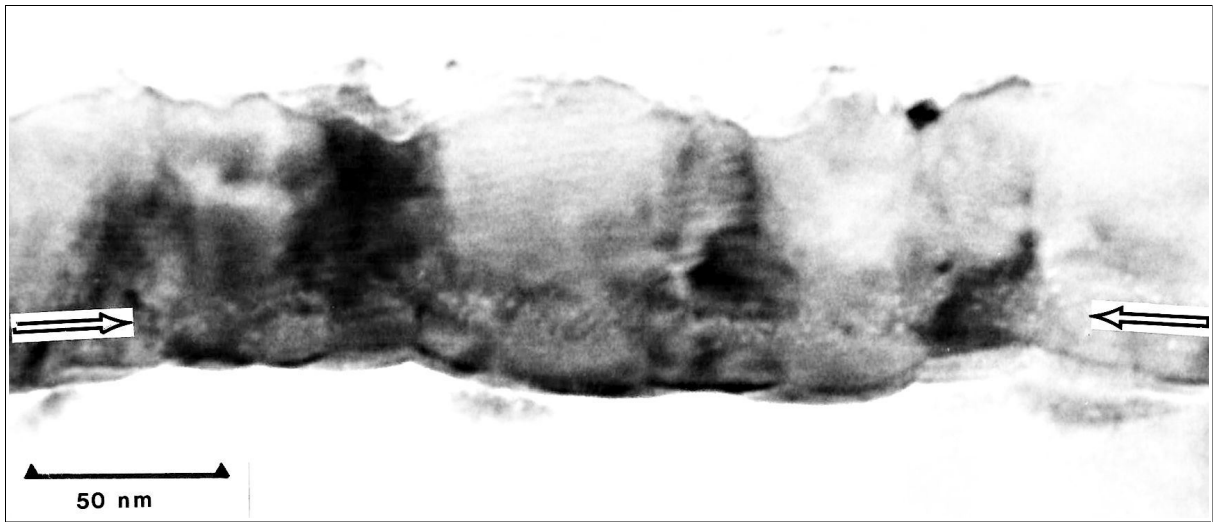


Fig. 15 in the "lost book"
Identical top Fig Fig. 3 In Publication 3 (Transmission electron microscopy investigation of silicide formation on slightly oxidized silicon substrates)

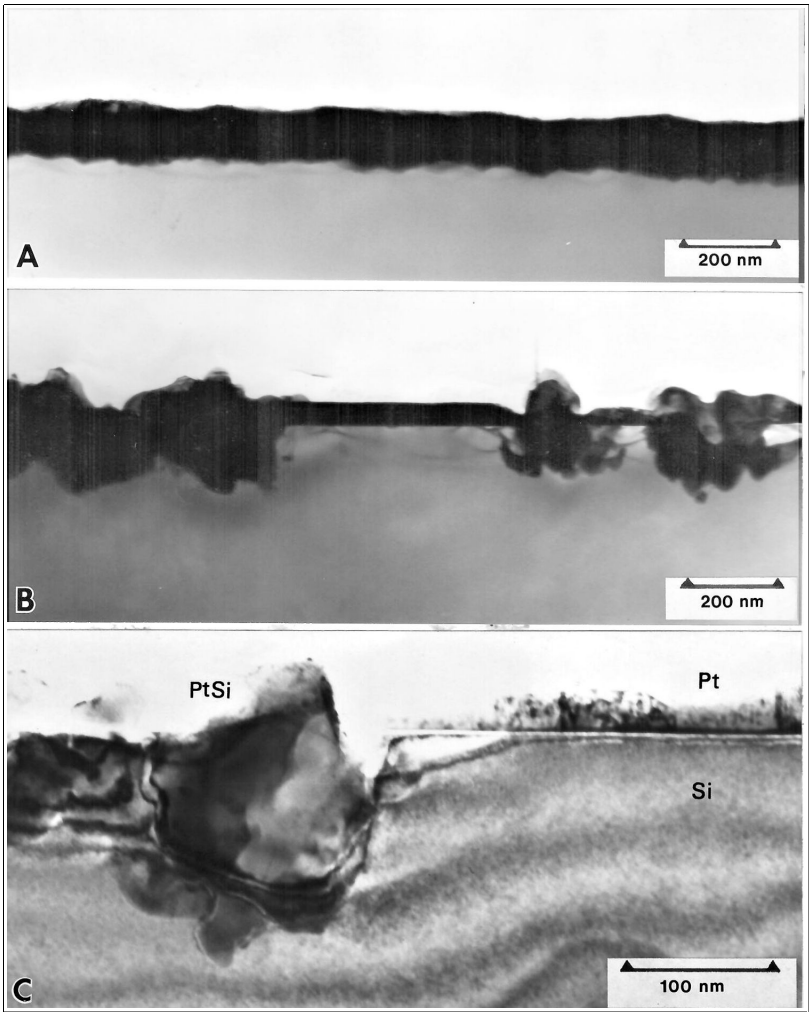


Fig. 16 in the "lost book"
Identical top Fig Fig. 7 In Publication 3 (Transmission electron microscopy investigation of silicide formation on slightly oxidized silicon substrates).

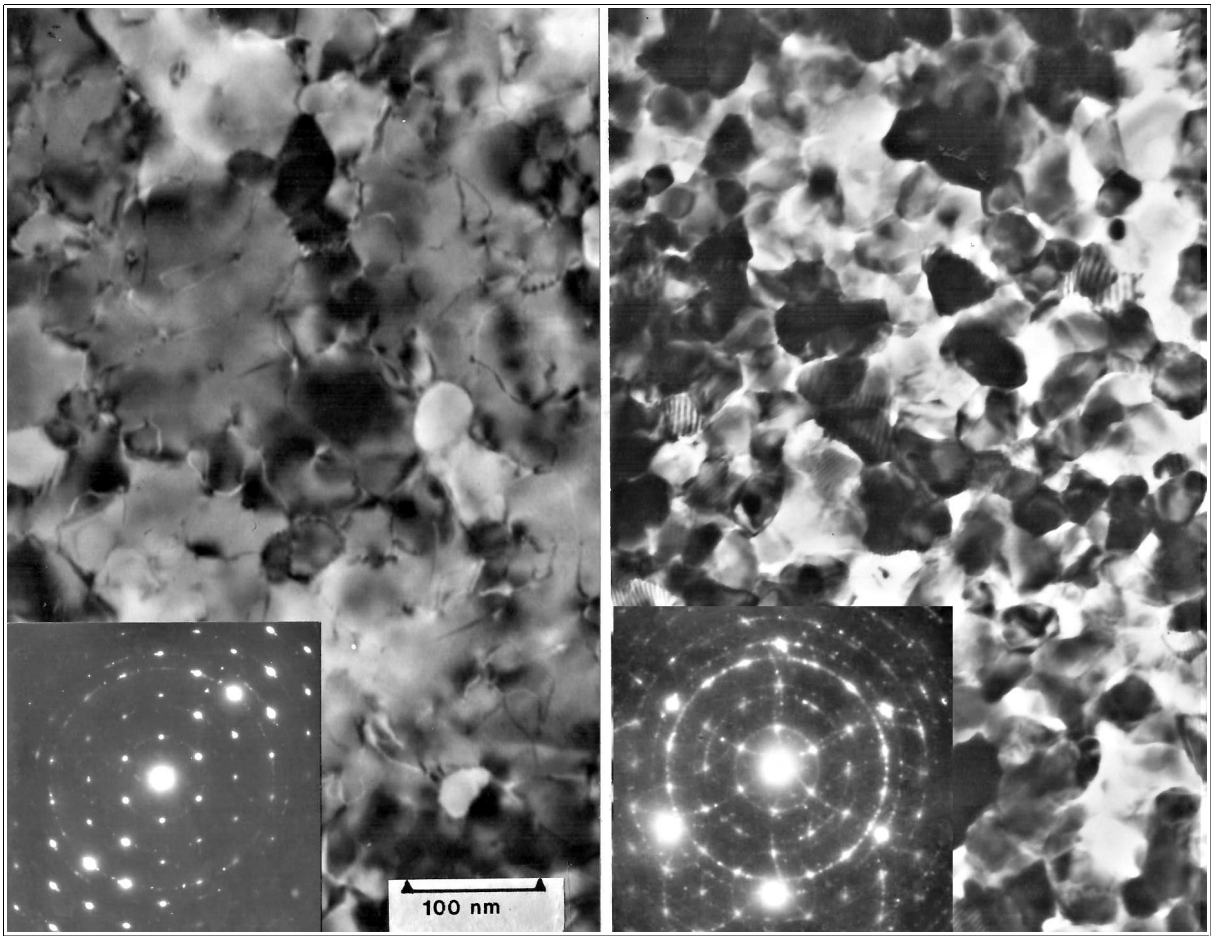


Fig. 17 in the "lost book"
Identical top Fig Fig. 1 In Publication 3 (Transmission electron microscopy investigation of silicide formation on slightly oxidized silicon substrates).

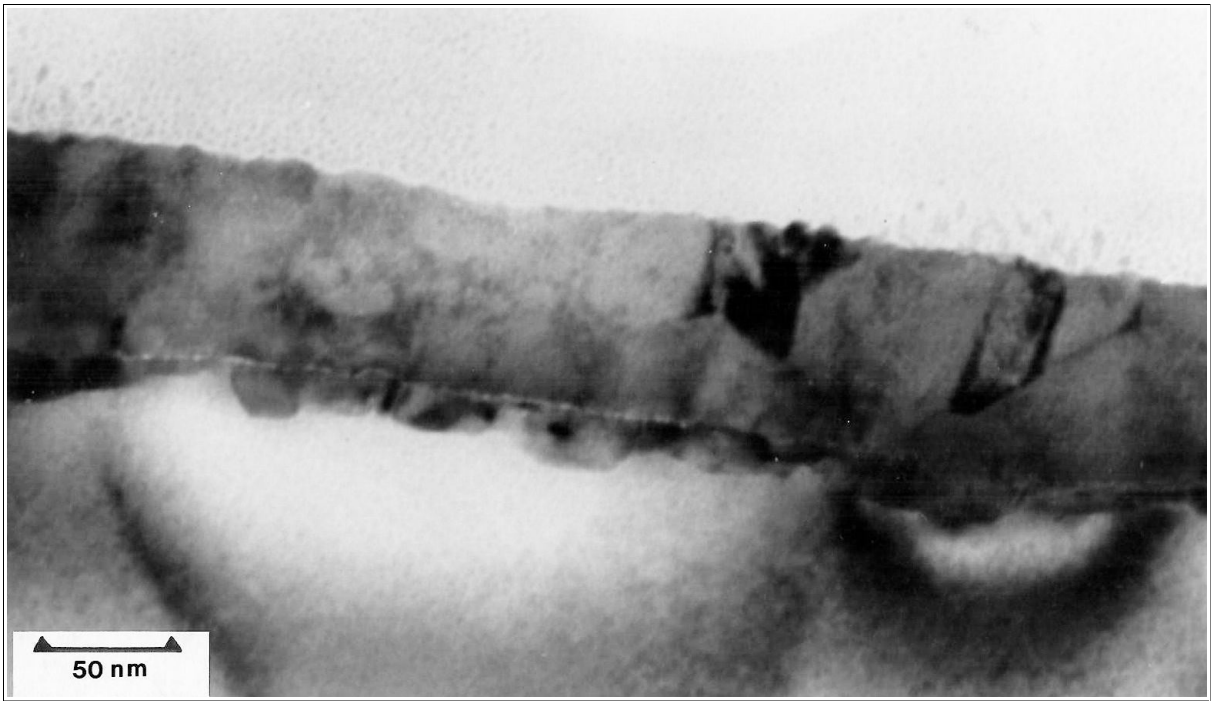


Fig. 18 in the "lost book"
Identical top Fig Fig. 8 In Publication 3 (Transmission electron microscopy investigation of silicide formation on slightly oxidized silicon substrates).

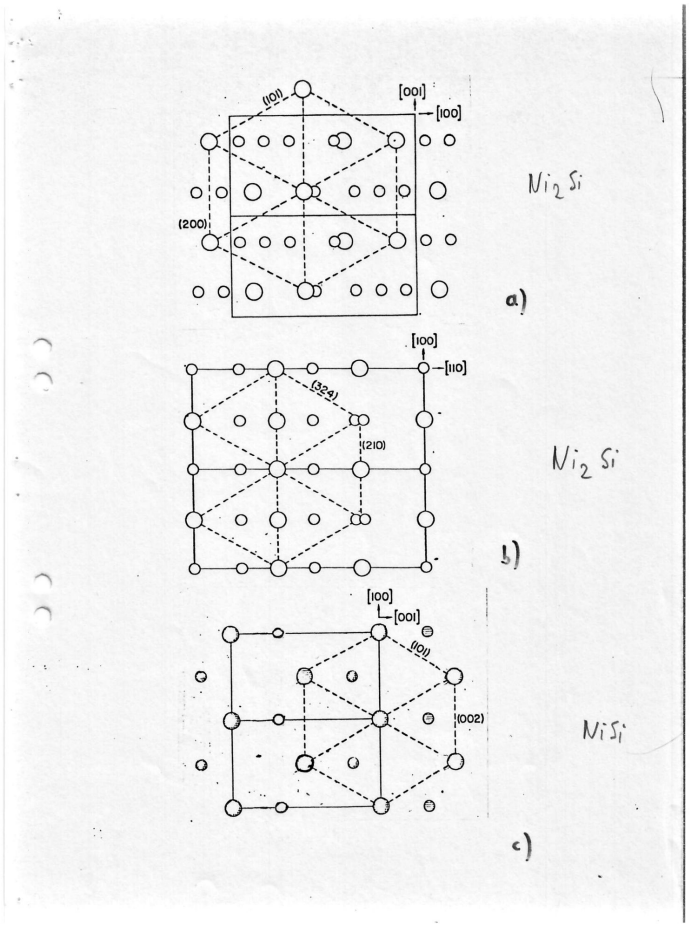


Fig. 21 in the "lost book"
It shows that for all three Ni silicide you can find an orientation that produces an (almost)
hexagon that matches quite well with the Si {111} hexagon and thus enables epitaxy.

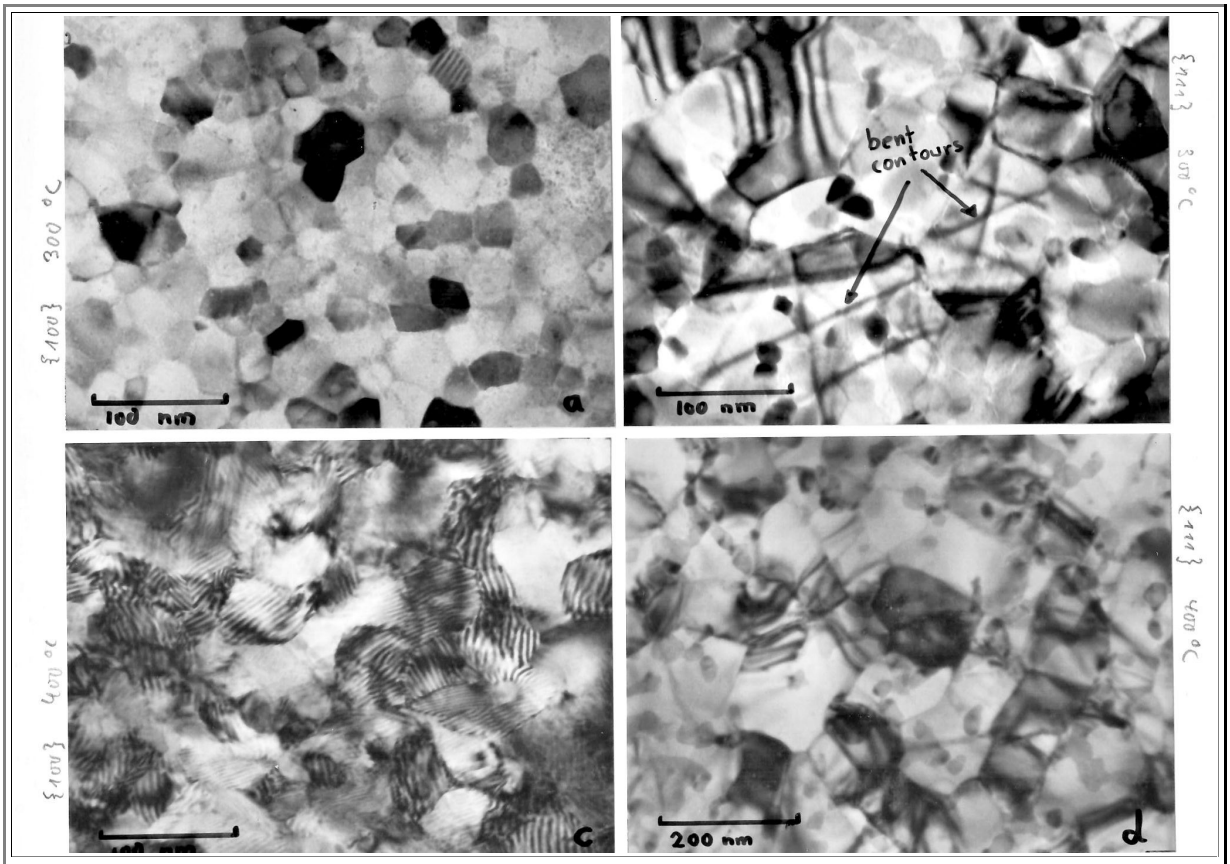


Fig. 22 in the "lost book" .
Shows the development of Ni_2Si and NiSi on {100} and {111} Si substrates at 300 ^{o}C and 400 ^{o}C. Note that there might be 2 layers on top of each other.

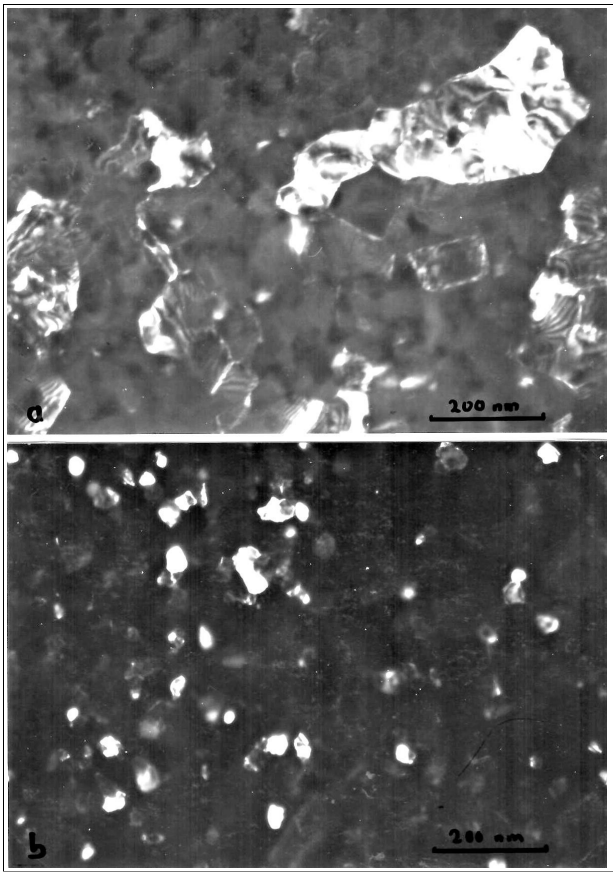
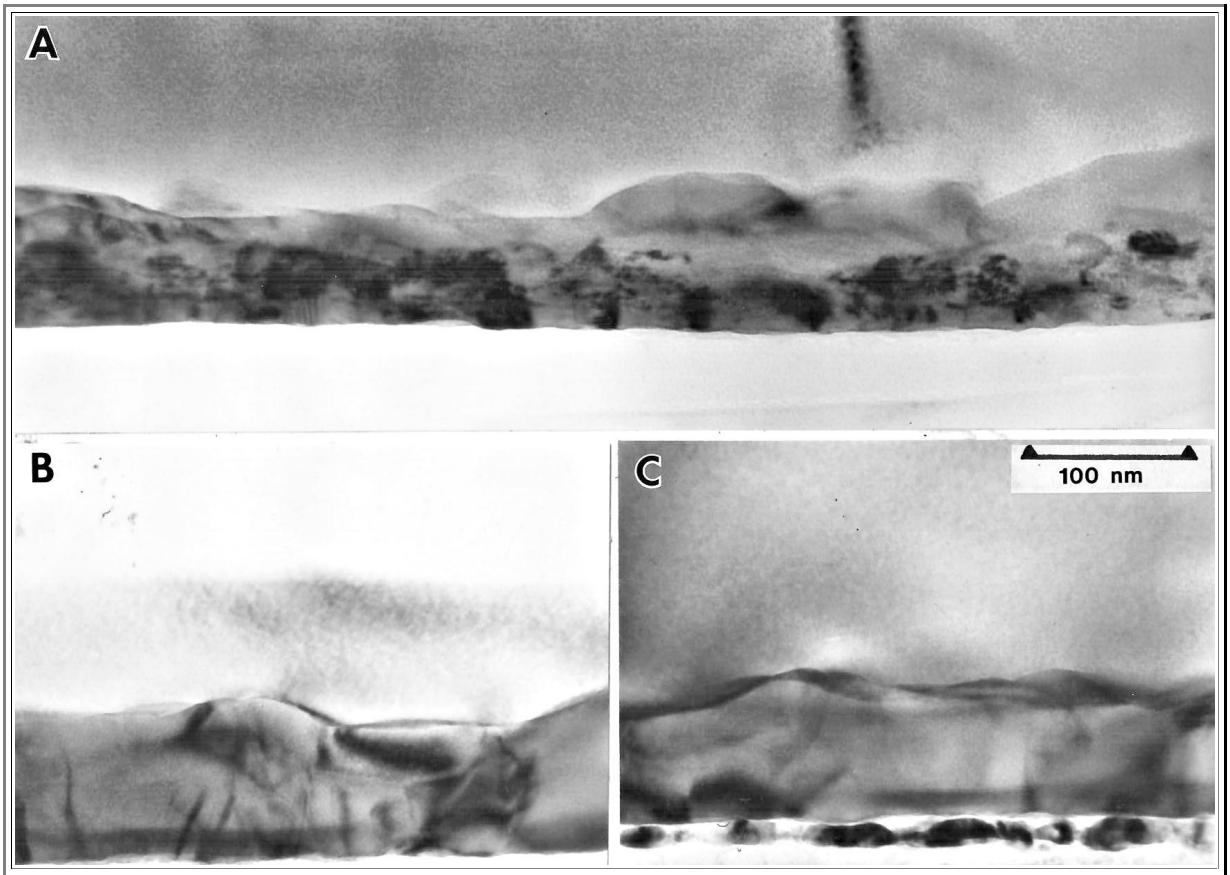
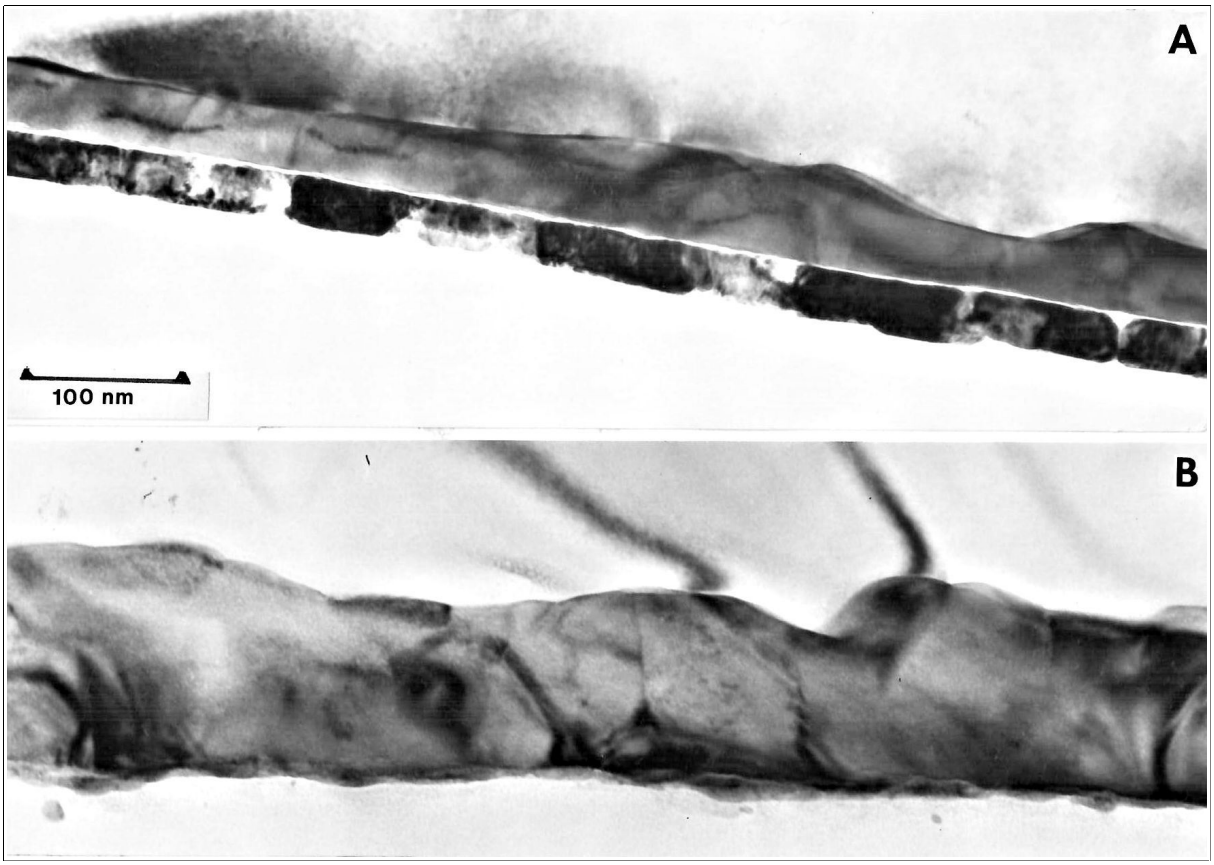


Fig. 23 in the "lost book"
Dark field images using reflection from the silicides





Similar to Fig. 24 in the "lost book"
The actual pictures are Fig. 7 and Fig. 8 of publication 2 (Transmission electron microscopy of the formation of nickel silicides.).
Top: (a) Ni_2Si formation on {100} Si at 300 ^oC
. (b) NiSi forming at 400 ^{o}; some $_2$Si still on top. Different areas show somewhat different structures,
Bottom: Same thing on {111} Si. Both silicides are already present at 300 ^oC.

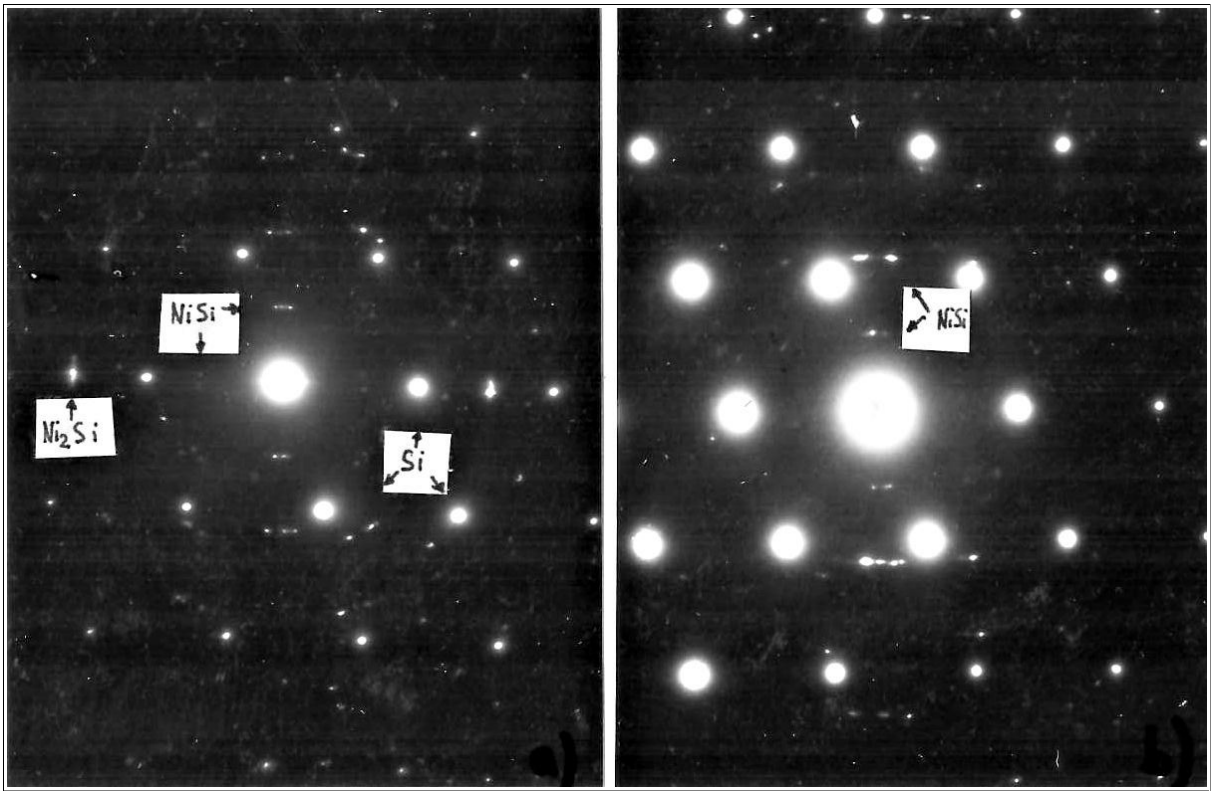
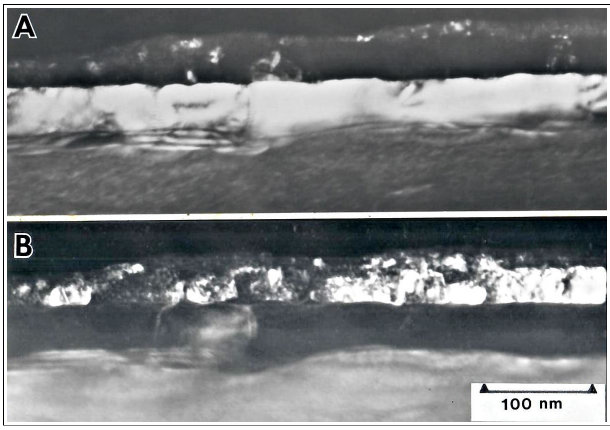
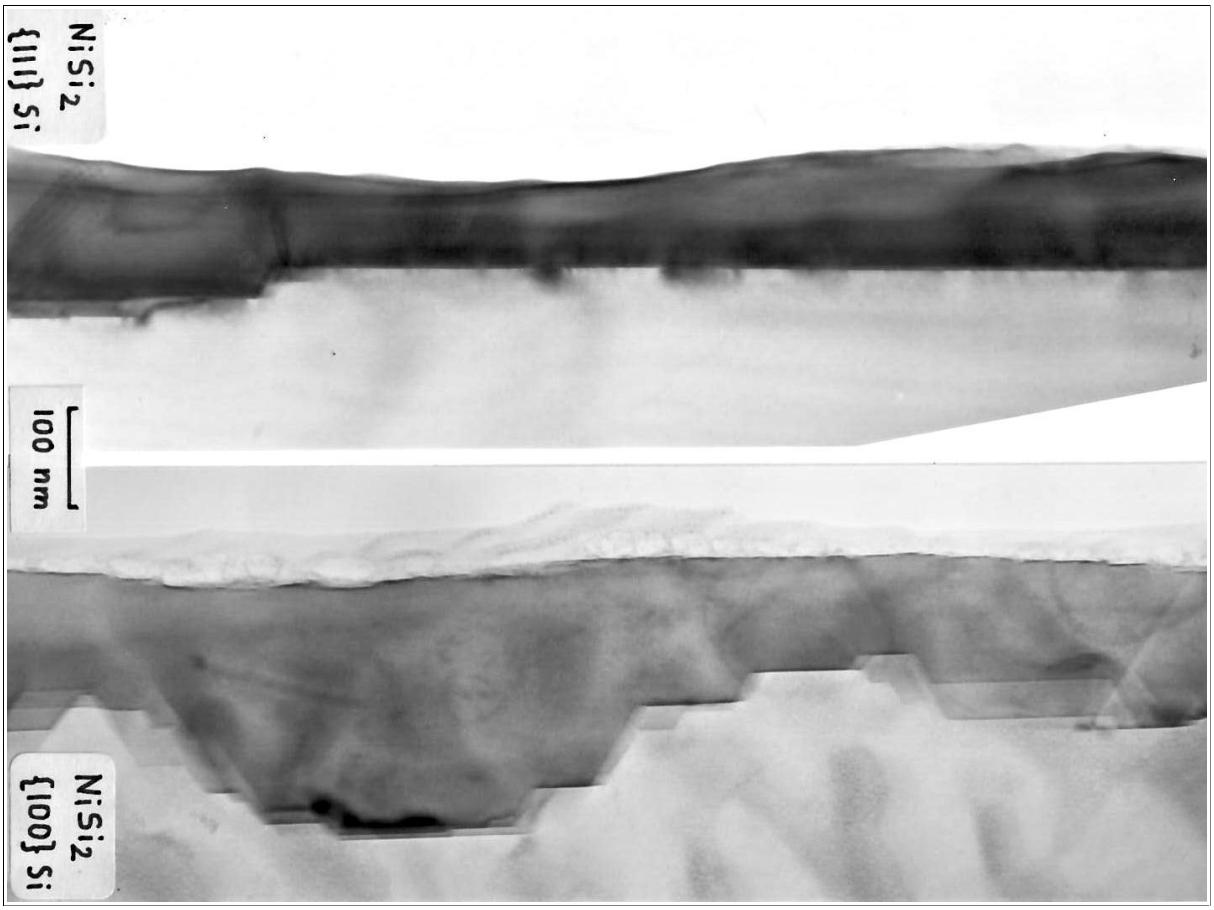


Fig. 25 in the "lost book"



Similar to Fig. 26 in the "lost book"
The actual picture here is Fig. 11 of publication 2. Just "A" and "B" are exchanged



Almost Fig. 27 in the "lost book".
Just the inset is missing

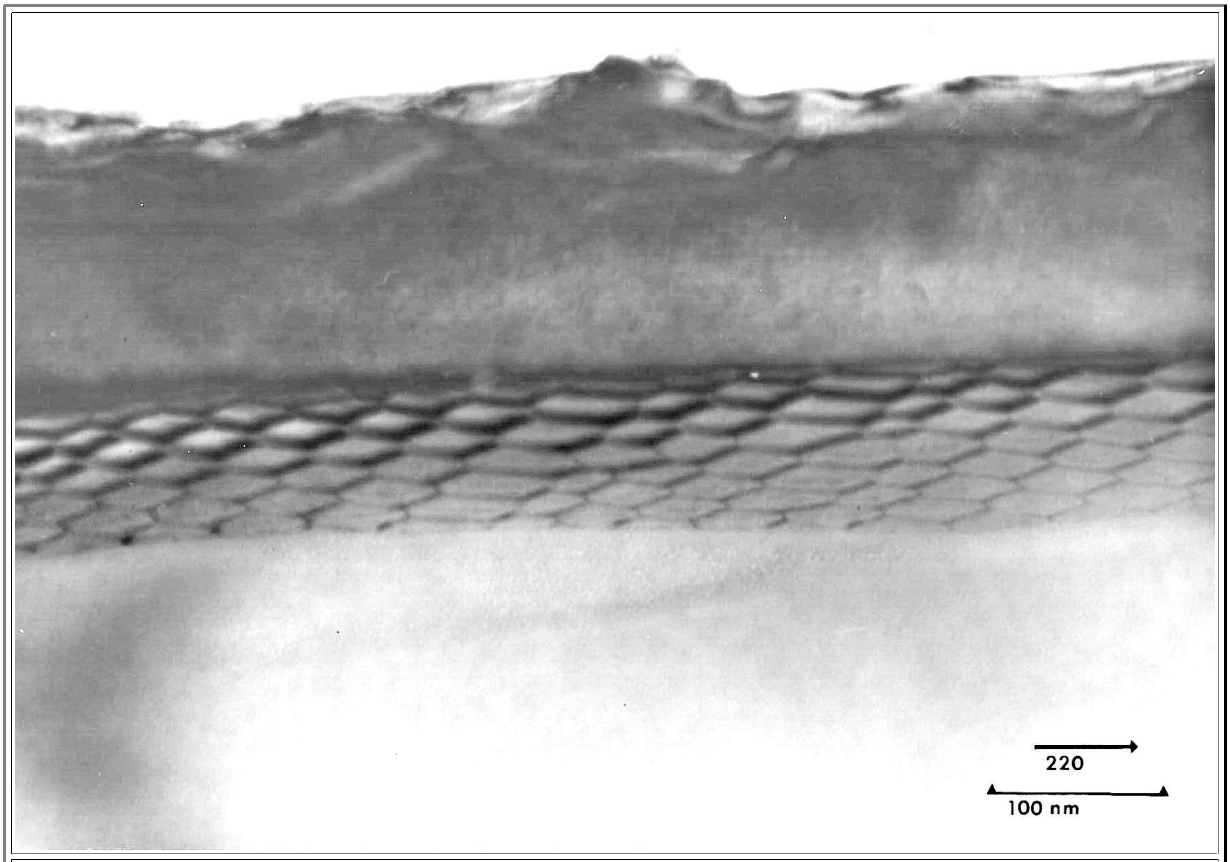
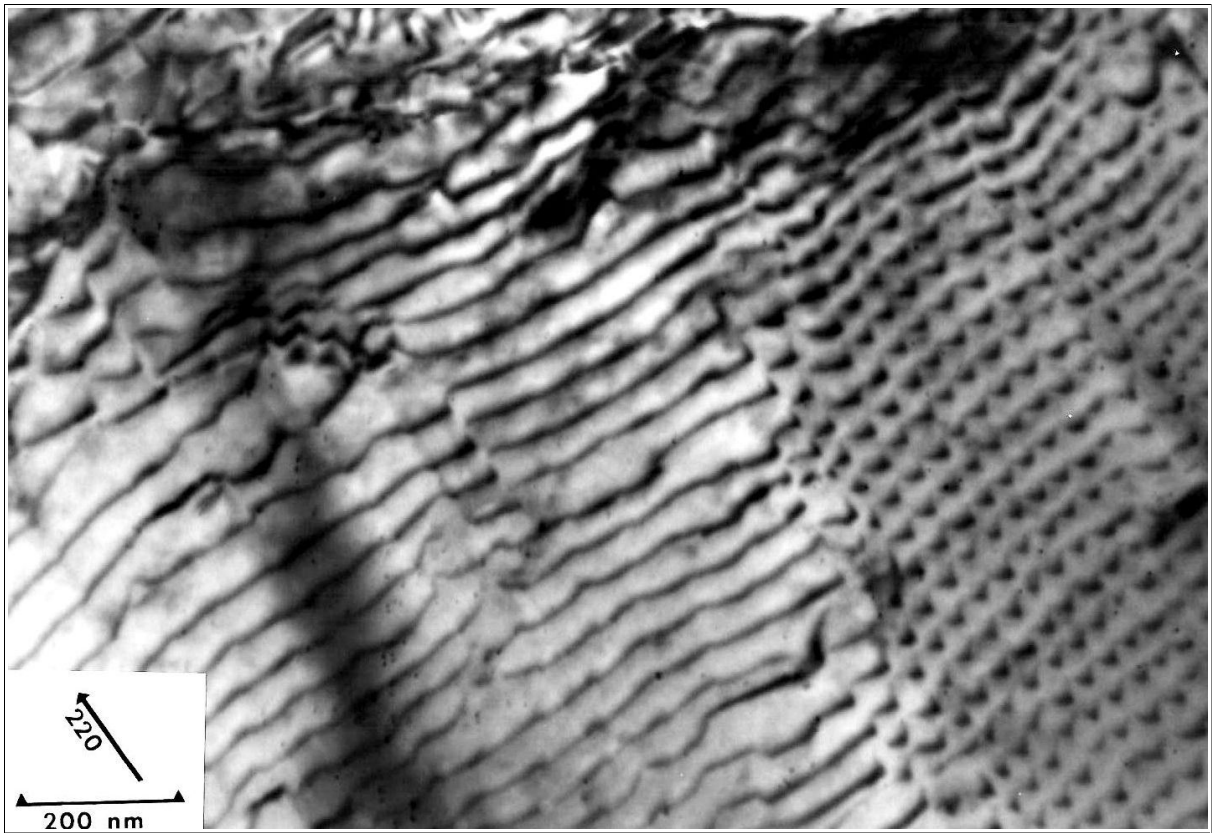
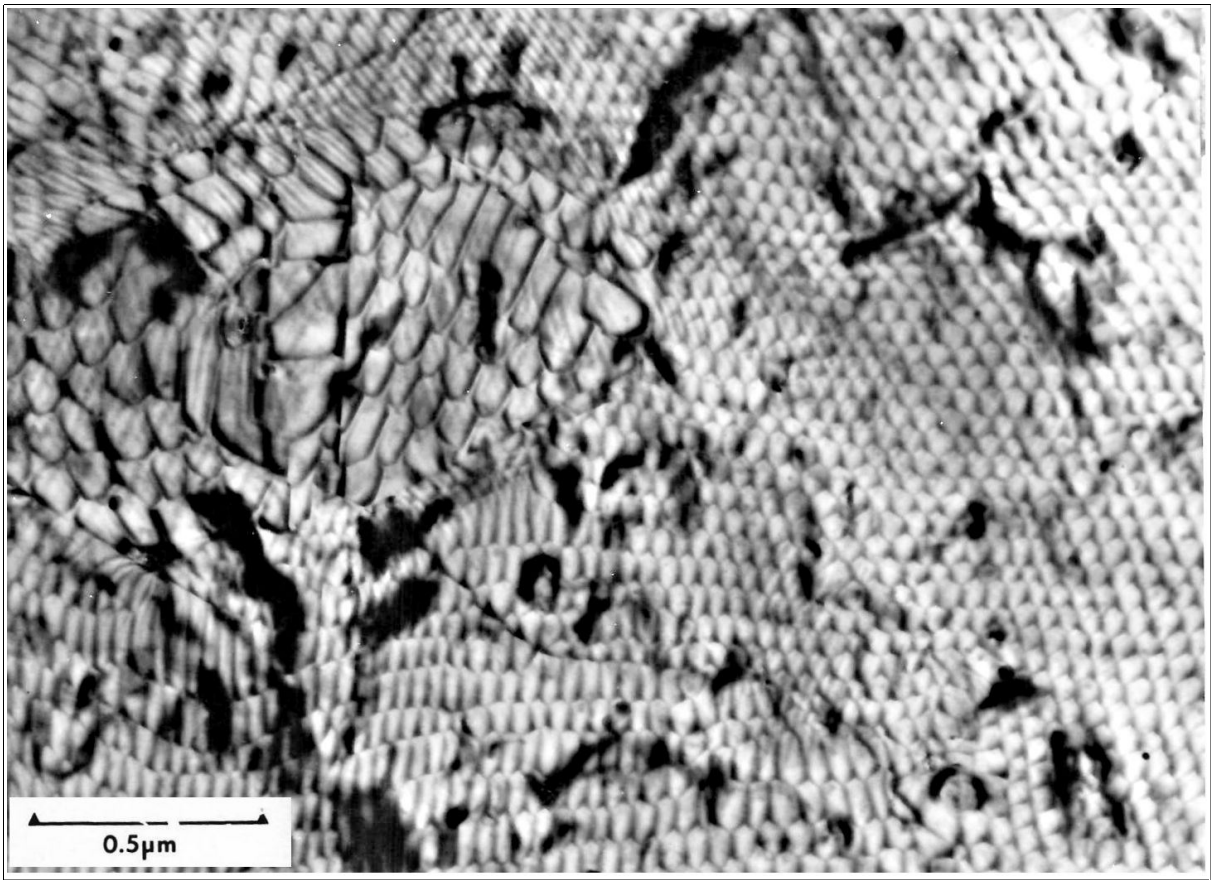


Fig. 28 in the "lost book".
It is also Fig. 9 in publication 1..





Close to Fig. 29 in the "loast" book.
Fig. 29 has also been used n publication 1

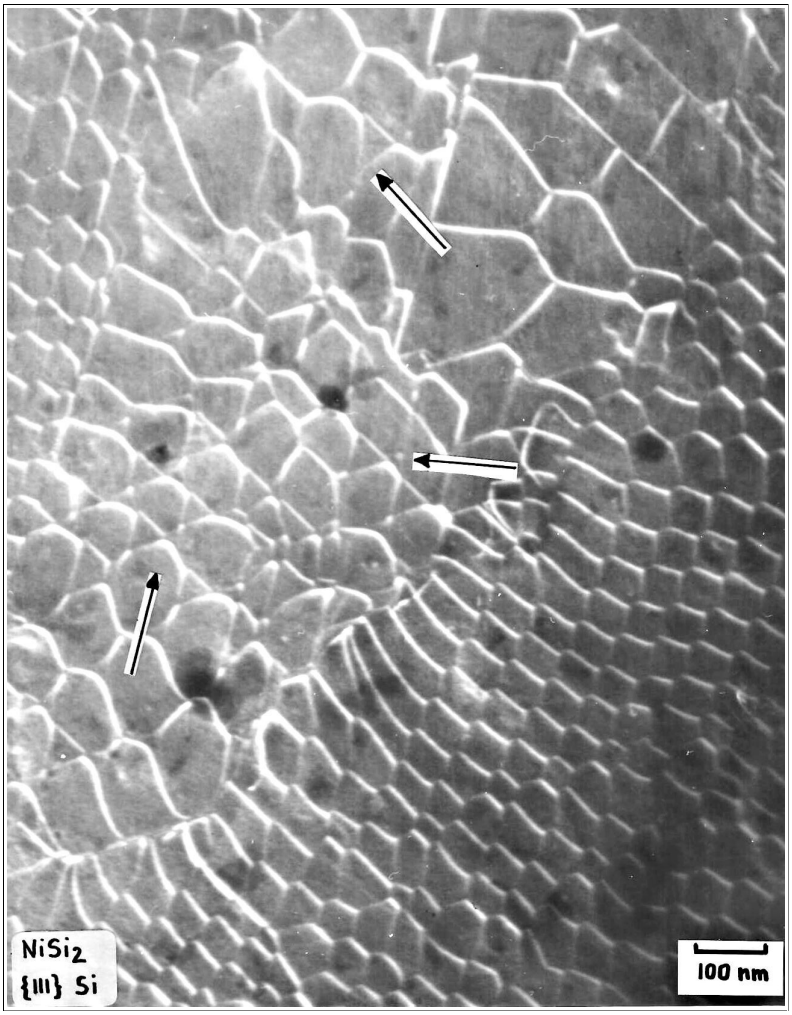


Fig. 30 in the "lost" book.

Figs. 31 and 32 are lost

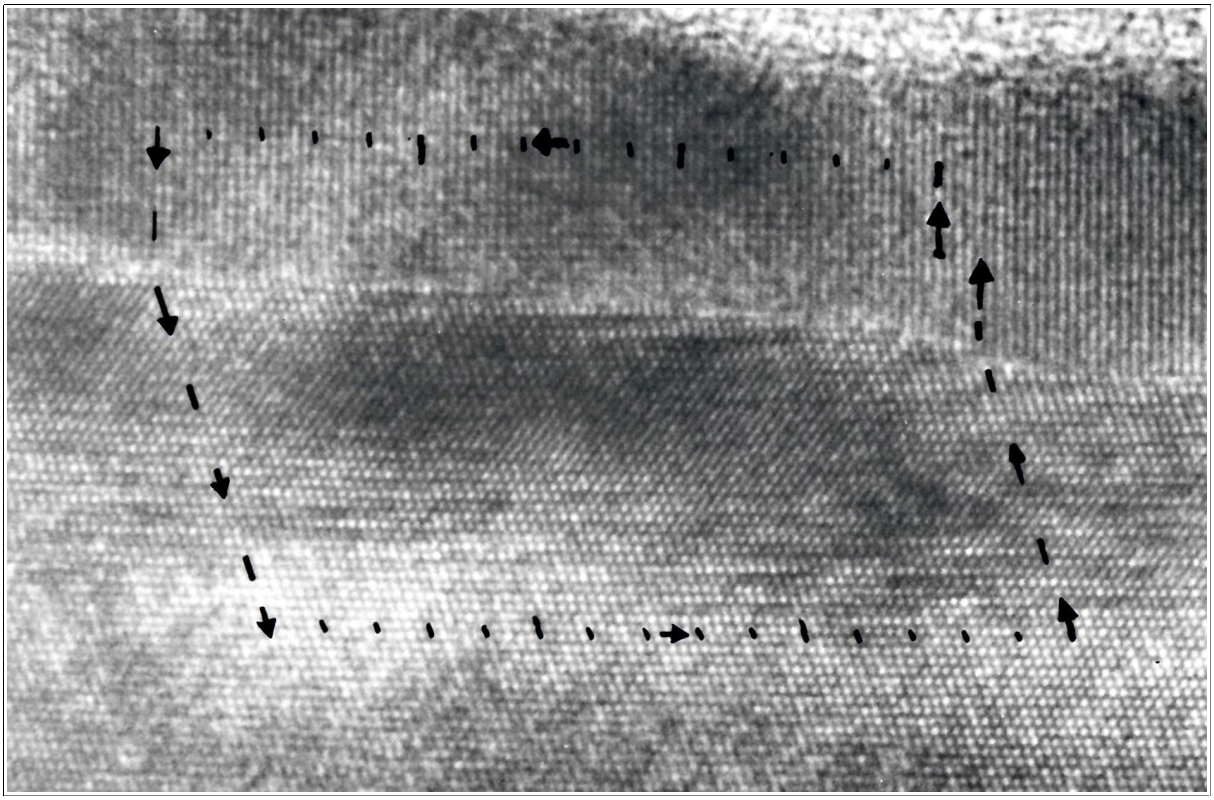
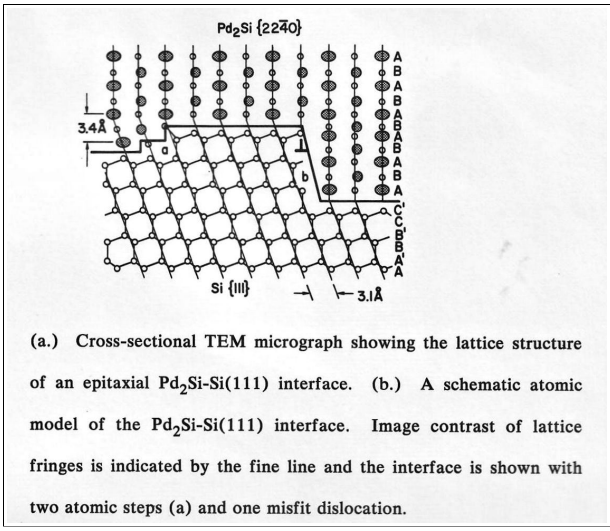


Fig. 33 in the "lost" book
Also used in Publication 1



(a.) Cross-sectional TEM micrograph showing the lattice structure of an epitaxial Pd_2Si-Si(111) interface. (b.) A schematic atomic model of the Pd_2Si-Si(111) interface. Image contrast of lattice fringes is indicated by the fine line and the interface is shown with two atomic steps (a) and one misfit dislocation.

A drawing similar to the one intended Fig. 34 in the "lost book". .
The text to (b) applies

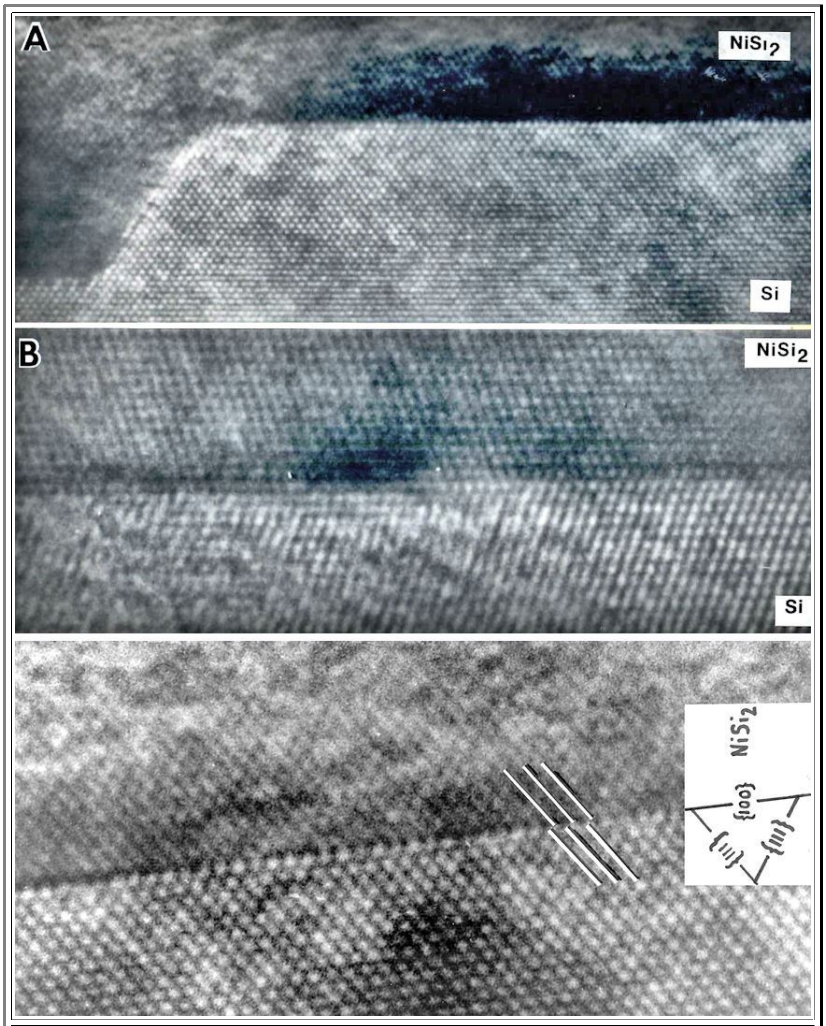
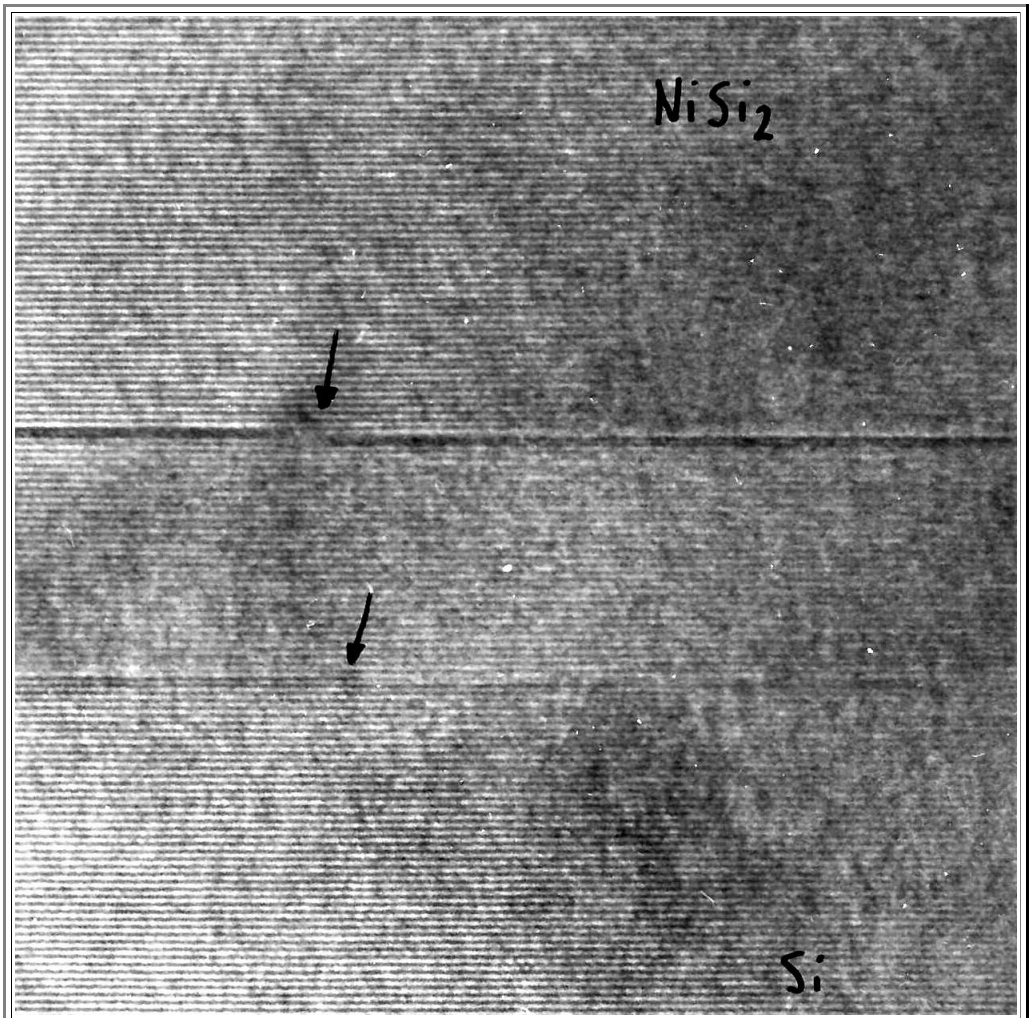


Fig. 35 in lost book.



.**Fig. 36 in lost book**
I'm nit sure why there seem to be 2 interfaces. Most likely the interface is inclined

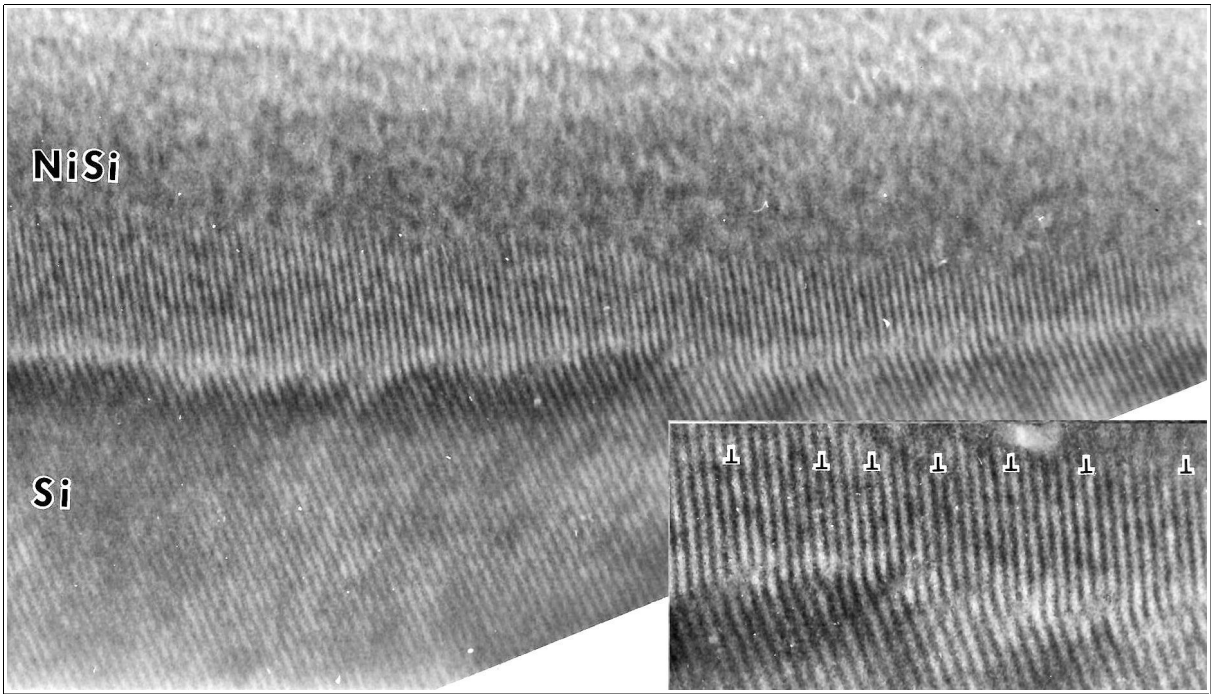
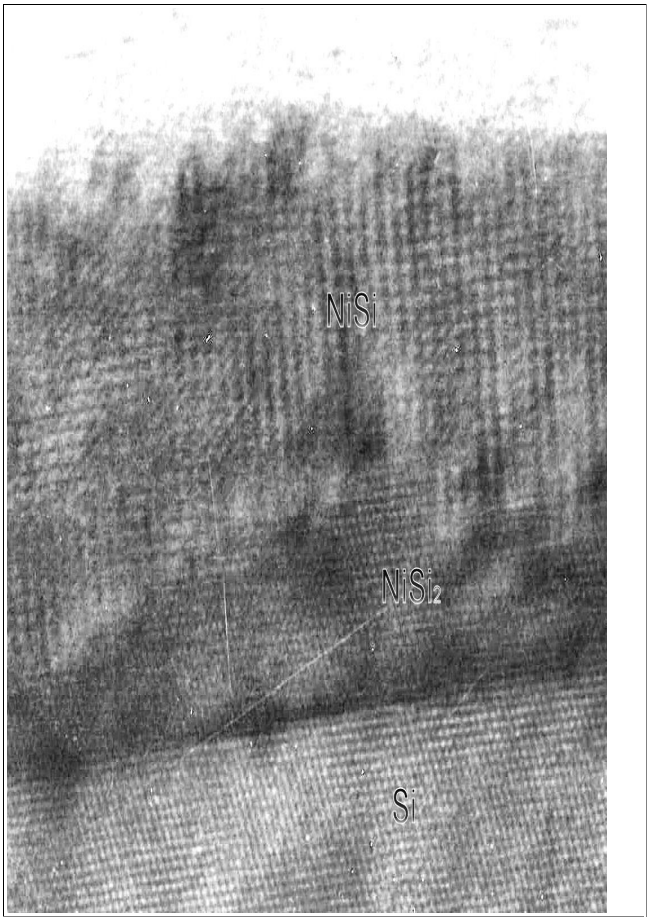


Fig. 37 in lost book
The inset is a magnified part of the picture with misfit dislocations indicated



.**Fig. 38 in lost book**
The lower image is a magnified part of the upper one

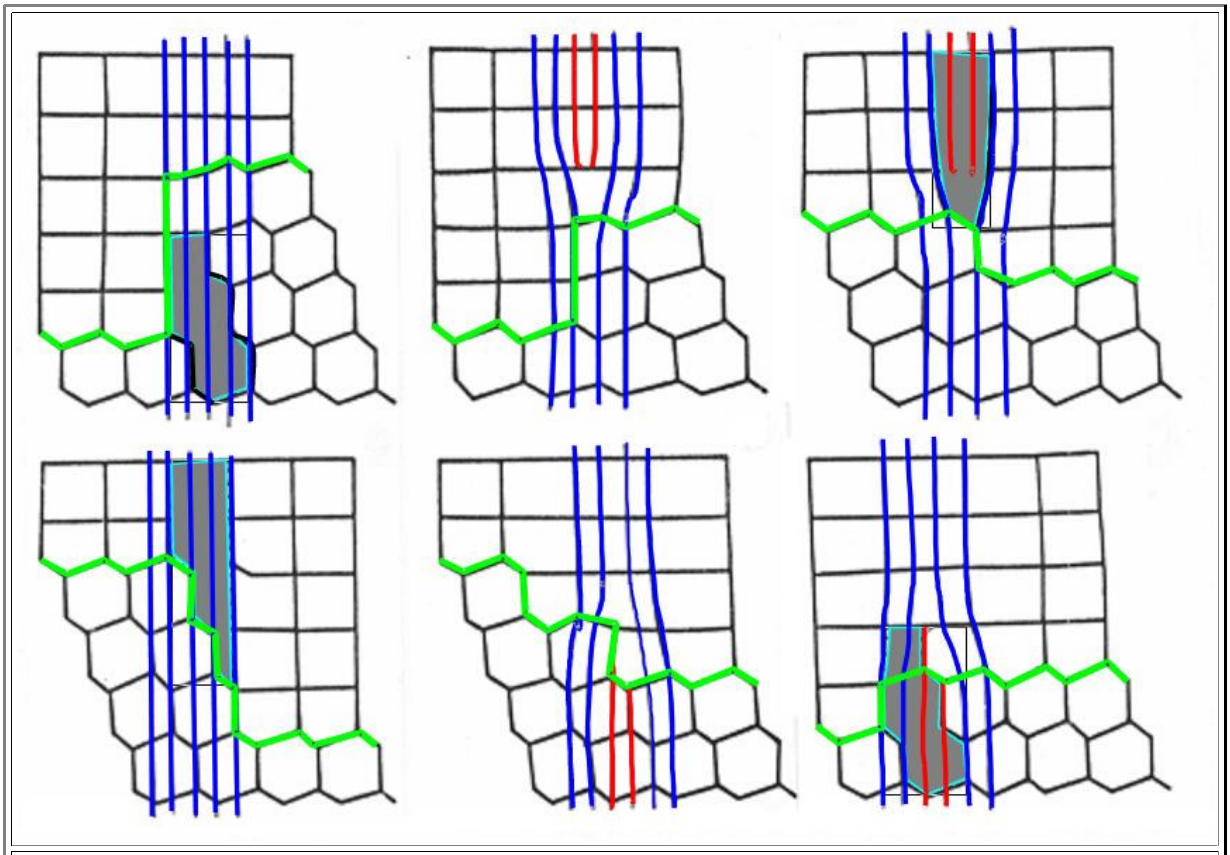


Fig. 40 in lost book
The intended picture was Fig. 5 in paper No. 41 in my publication list:
FÖLL, H.: Lattice imaging of silicides-silicon interfaces. Phy. Stat. Sol. (a) 69 (1982) 779 (28 citations)
This colored version is used in my Hyperscript "Defects" in chapter 8.3. This chapter also contains the next 2 figures.

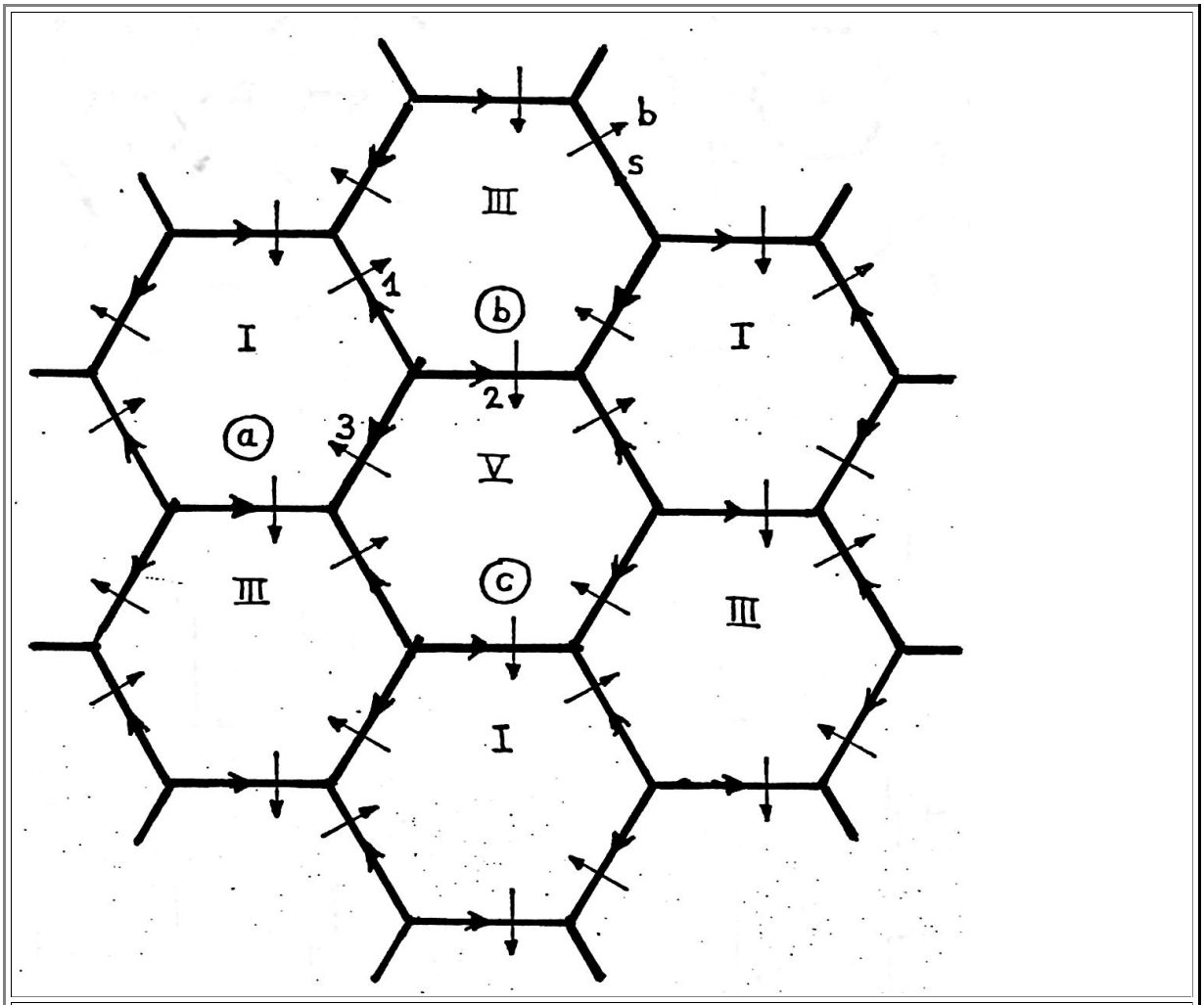
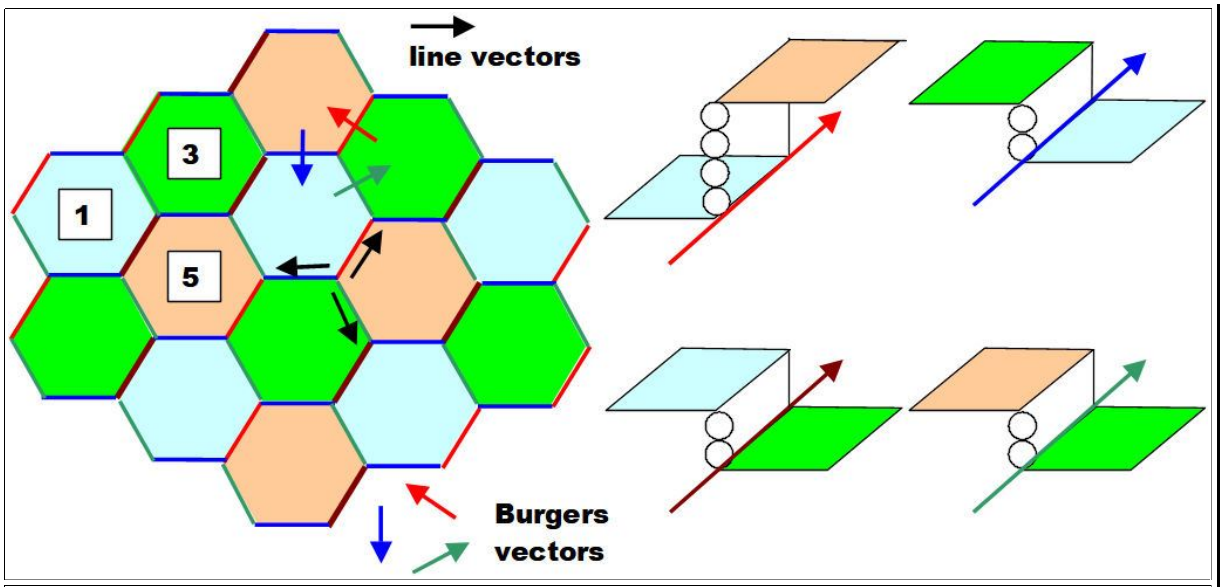
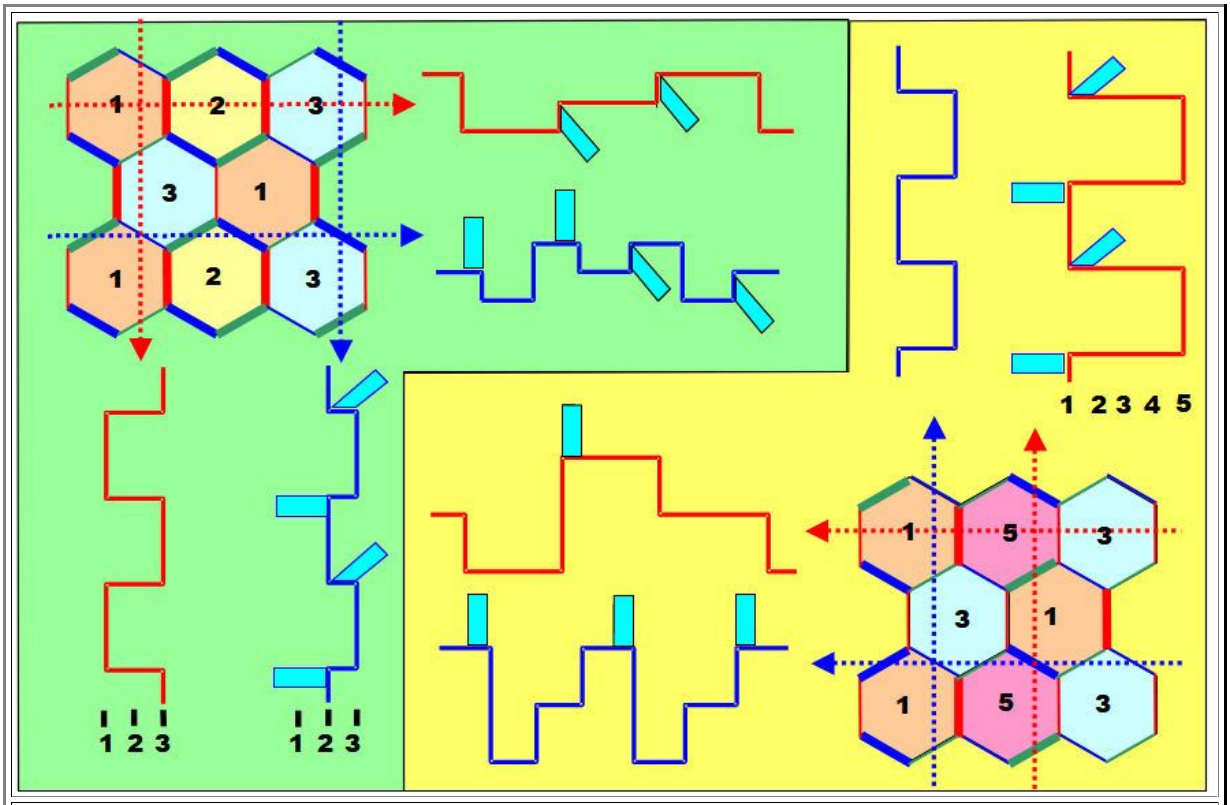


Fig. 40 in lost book



This colored and extended version is used in my Hyperscript "Defects" in chapter 8.3.



.**Fig. 42 in lost book as interpreted in the Defects Hyperscript**
Here is the text from the hyperscript:
Shown are two possible combinations of dislocations and steps in S=3 boundaries (of any kind). Dislocations in combination with a coherent
step are indicated in bold lines; the numbers in the hexagons indicate the level of the boundary Two possible geometries are shown in the upper
left-hand corner and the lower right-hand corner Four cross-section through the dislocation/step network are drawn in together with their schematic
image in HRTEM. Ending lattice fringes are indicated in light blue (assuming without justification that the image of dislocation/step combinations
that are inclined with respect to the electron beam add no further complications).