SWINBURNE UNIVERSITY OF TECHNOLOGY

Ion milling of a 100 nm-thick Silicon Nitride membrane

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Info for all following slides:

- FIB miling time < 1 s
- SEM images were made without any coating

Main result: Resizing of holes down to ~ 10 nm diameter is possible (challenge is to measure)

Smallest holes (10 nm is resolution spec for IonLine)

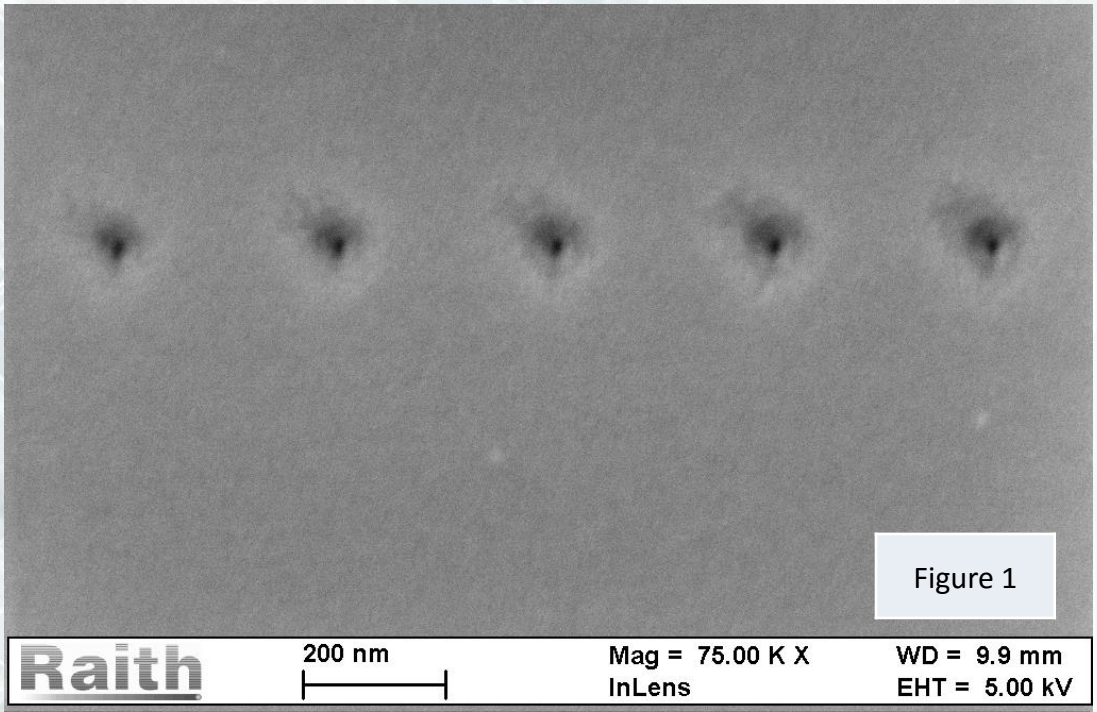

Figure 1 :
Smallest Ga-ion milled holes. Holes with diameter around 20nm.

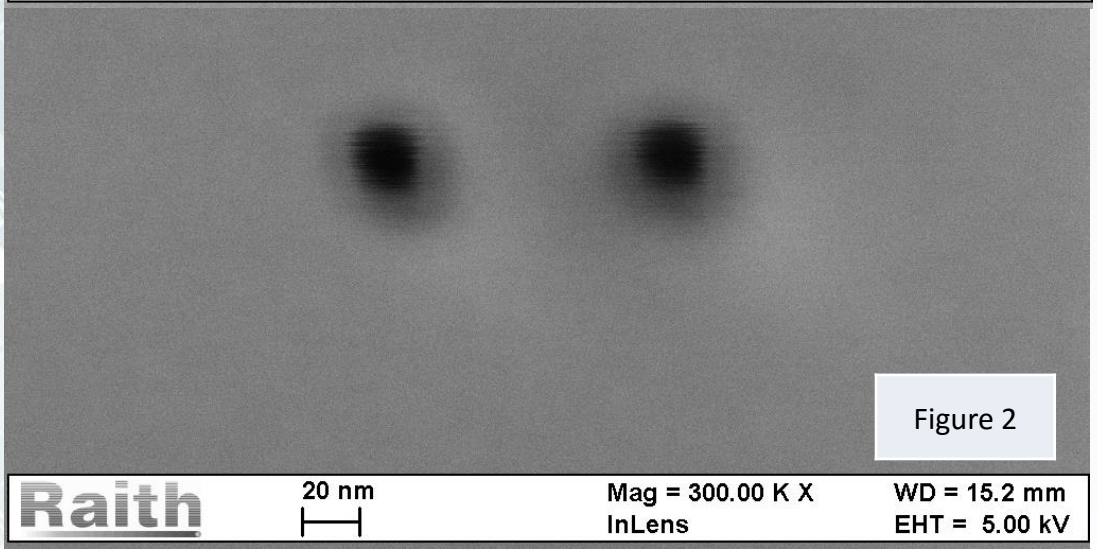

Figure 2 :
Smallest Ga-ion milled holes. Holes with diameter around 20nm.

Back-side view

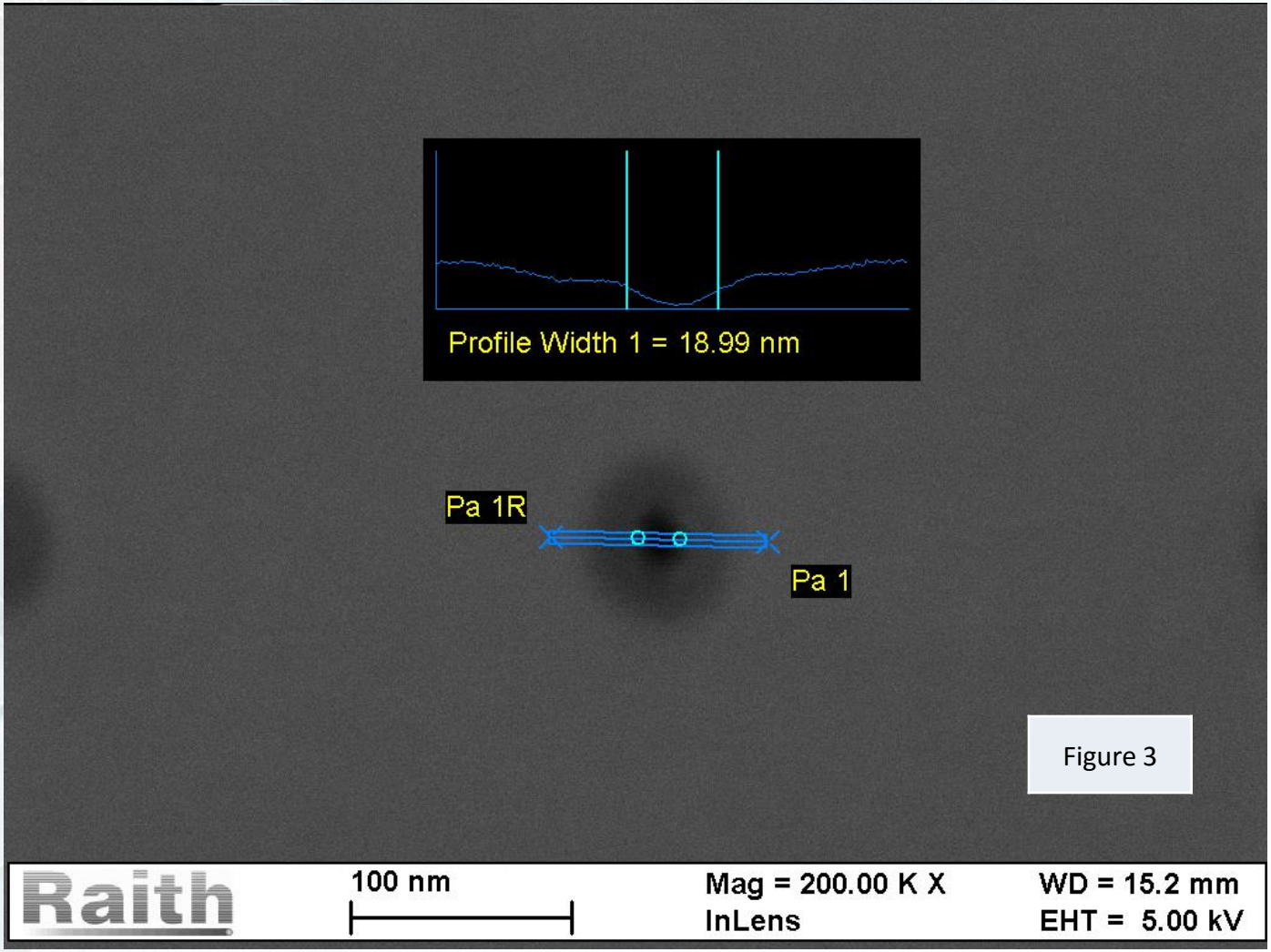

Figure 3: Back-side view of the hole. The 40nm wide hole (front view) is 20 nm (back view).

Resizing of holes: easy!

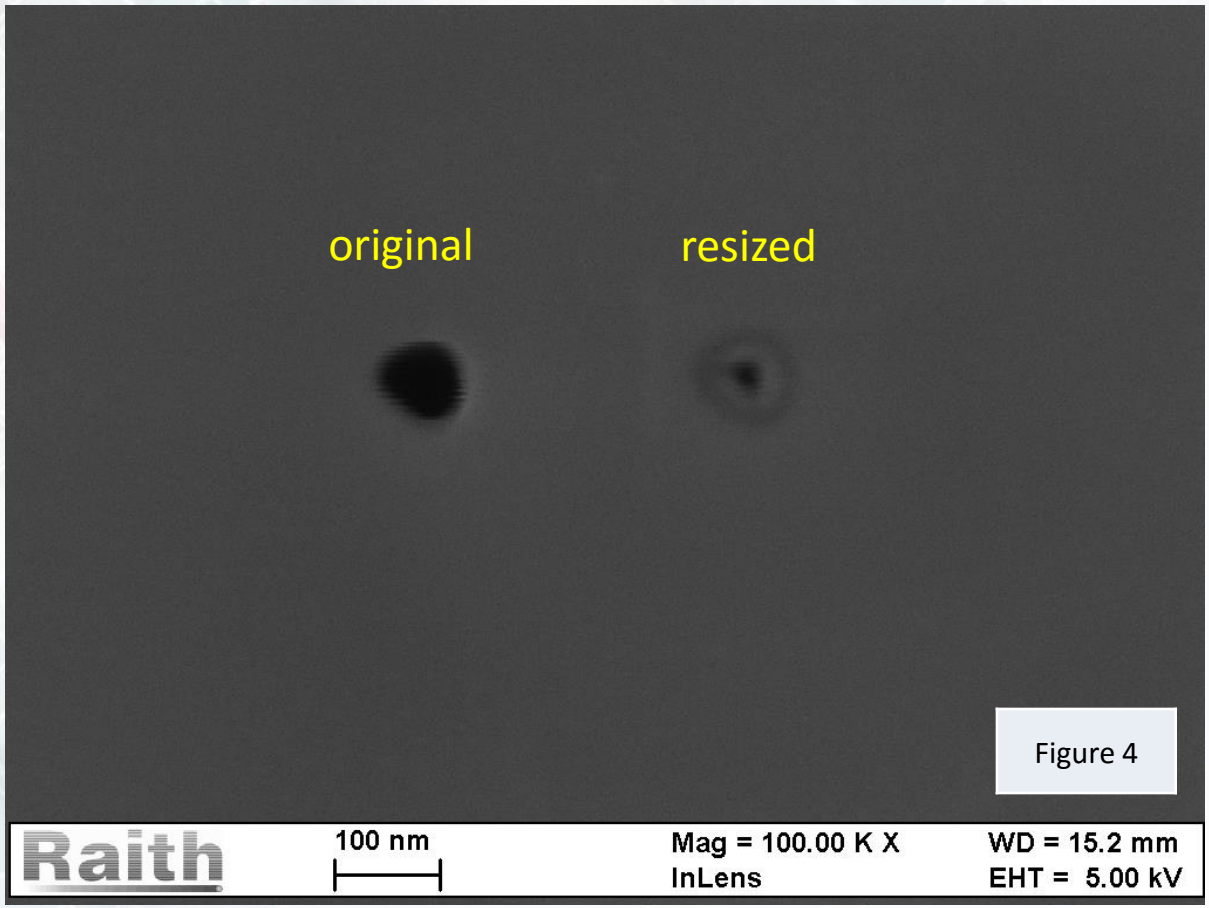

Figure 4: One of the two holes of 80 nm was closed down to 20 nm hole. The shape of the final hole is also more circular.