Custom Fabrication of SiNx Witness Prototypes

Project Scope

Provide silicon-based prototype devices featuring nanoscale silicon nitride layers fabricated using Norcada's MEMS technology.

Norcada's work towards the fabrication of devices, will include the following tasks:

- Chip design, process simulation, design validation and production planning
- Fabrication of silicon prototypes
- Testing for cleanliness, surface topology, and other physical aspects before shipping prototype devices
- Film thickness and integrity characterization using optical, ion and electron microscopy
- Regular project updates and reporting

Reference Chip Specifications:

Frame Type: Intrinsic Single Crystal Silicon, >10,000 Ωcm

Lateral Dimensions: 5.0 mm x 5.0 mm (± 0.2 mm)

Thickness: 200 µm (± 10 µm) thick or similar

3 types of reference chips will be provided:

Reference Chip 1: Si Frame Only

Reference Chip 2: SiNx on Si Frame, no membrane.

SiNx Thickness: 100 nm (± 5 nm)

Reference Chip 3: SiNx membrane suspended over Si Frame.

Membrane Lateral Dimensions: 1.00 mm x 1.00 mm (± 0.03 mm)

SiNx Thickness: 100 nm (± 5 nm)

Membrane Type: NORCADA Optimized High-Q Silicon Nitride

Targeted Stress: 0.9 GPa (± 0.2 GPa) The final units will have tighter tolerances within each batch. Final membrane stress will be measured and reported.

Lateral Dimensions: 1.00 mm x 1.00 mm (± 0.03 mm)

Thickness: 100 nm (± 5 nm)

Quality Control:

- Norcada will inspect all devices under optical microscopy prior to packing.
- Witness devices will be inspected with relevant techniques in Norcada's array of analytical tools (SEM, Optical Surface profilometry, etc.)
- **Targeted Silicon nitride stress, as deposited,** will be measured and reported at end of project.
- **Thin Film thickness and physical measurements** will be measured and reported at end of

project

- Device flatness will be measured using optical surface profilometry
- Images of the device structure will be shared at the end of this project
- All devices cleaned and sealed in a cleanroom environment before shipping.

Payment Methods 付款方式

The project will be invoiced in two phases: 50% of the project cost at the time of order, and the remaining 50% of the project cost at the time of final delivery.
All figures are in US dollars
所有報價金額均以美元（USD）計價
分兩階段請款：

- 第一階段：下訂單時，支付專案總費用的 50%。
- 第二階段：最終交貨時，支付剩餘的 50%。