Creating Business from Physics Research

Views from an entrepreneur and investor

ILO-Day @ Nikhef

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  An novel approach to startup creation in deeptech
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Introduction Steven Tan

- **Education**
  - **MSc** in Industrial Engineering from TU Delft (1986)
  - **MBA** from Erasmus University, Rotterdam School of Management (1999)
  - **RTTP:** Registered Technology Transfer Professional (2011)
- **Career**
  - 5 years as startup entrepreneur
  - 8 years international VC in high-tech
  - 12 years TTO
    - TTO Erasmus MC
    - IXA
- **Currently**
  - Nascent Ventures (since 2017)
  - Director of **5 startups**
  - Member of the Investment Committee of **Invest-NL** Deeptech Fund

The common thread of my career:

1. *Entrepreneurship*
2. *Technology & Innovation*
3. *Academia*

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Part 1:
A novel approach on startup creation in deeptech pioneered by Nascent Ventures

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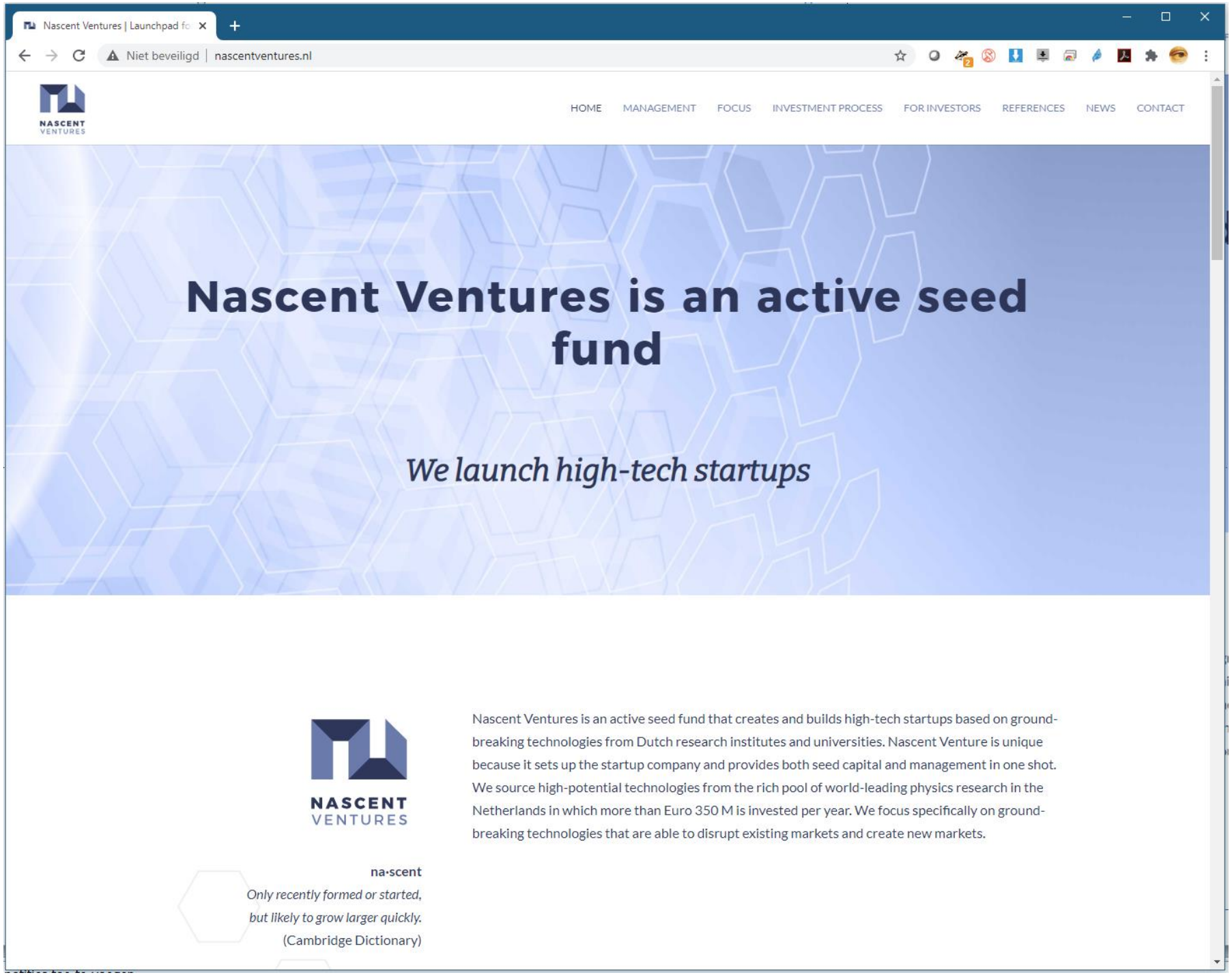

Nascent Ventures

- **Hans Brouwer** is an engineer in applied physics and a serial entrepreneur who has built a number of successful high-tech companies (Optics 11, Omniradar, Pepscope, etc.)

Our shared mission: simplify academic startup creation

- Strong focus: Deeptech/Advanced Instrumentation in NL
- Standard venture model: “Equal partner” model
- Lean strategy: Generate early revue in “exploration phase”

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Strong Focus

Plenty startup opportunities in Deeptech

- Spectacular advances in fundamental and applied nano-sciences provide a large and growing stream of break-through technologies and high-tech startup opportunities.
- Physics, chemistry and life sciences are converging at the nano-scale.
- NL is world class in nano-science and this is driving innovations in deeptech.
- NL has a strong deeptech industry (ASML etc.).
- Establishment of Dutch flagship programs:
  - PhotonDelta
  - QuantumDelta

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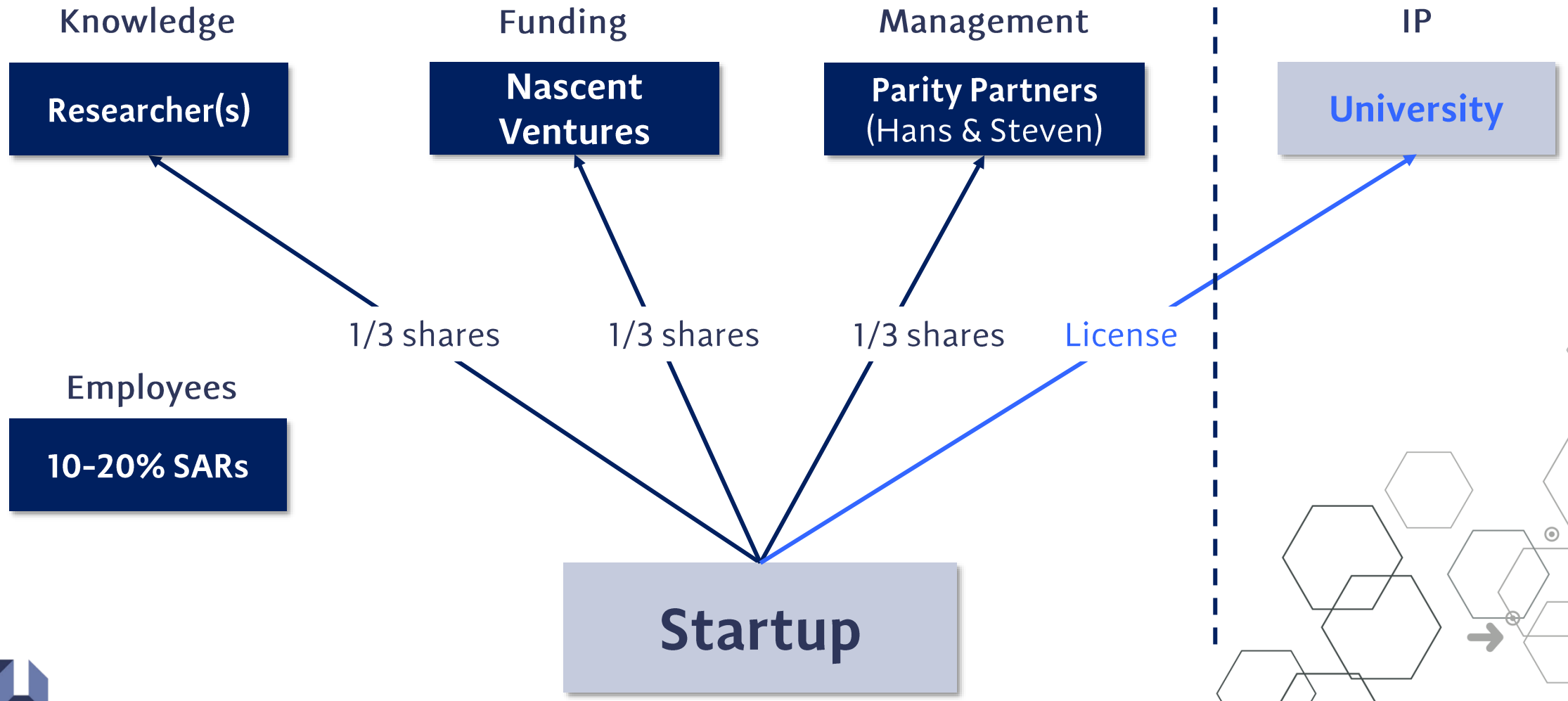
Equal Partner Model



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Strategy

Investment proposition

- Proven technology
- Marketable product
- Validated business case
- Go-to-market strategy
- Team & organisation

1	2	3	4
Founding Startup	**Seed funding**	**Exploration phase**	**VC Round**

Shares:
- 1/3 Nascent Ventures
- 1/3 Venture Team (HB+ST)
- 1/3 Researcher(s)

IP licensed from Univesity

Up to EUR 1M
- Convertible loan by NV
- Co-funding by informals
- Subsidies
- Grants

Exploration = method to find launching application and business case
1. Initial focus on research market
2. Develop “MVP” (TRL +1)
3. Sell MVP to researchers
4. Generate early revenue
5. Harvest use-cases and ideas
6. Select launching application
7. Develop business and investment case

Emission of Shares
- Conversion of Loan + Interest
- New Capital

Prepare for Scale-up

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The value of early revenue

Generating early revenue is **critical:**

1. **Revenue is the best source of funding**
2. Early customers provide valuable **feedback** for product development and improvements
3. Early customers (and their colleagues) provide valuable **ideas for new application** of the technology
4. Focus on revenue and customer is build into the **DNA** of the startup right from the start
5. Paying customers **validate the business case**
6. Actual customers and real revenue is highly **appreciated by investors**

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Investment Criteria

1. **Functionality:**
   A. **MOM principle** (Multiple Order of Magnitude better)
   And/or
   B. **Unique new** functionality

2. **Ability to generate early revenues**
   - Explicit early interest from fellow researchers or R&D departments

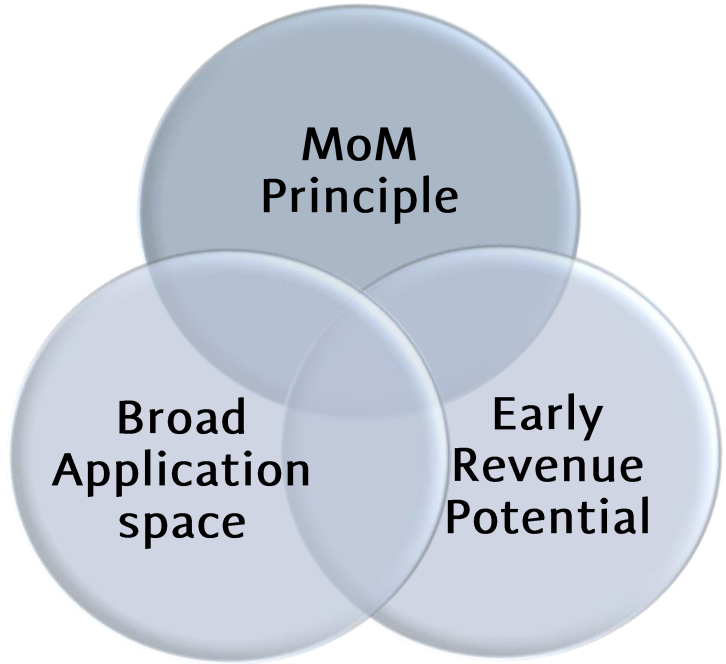
3. **Platform technology with broad application space**
   - Many conceivable applications
   - "Gut feeling"

4. **Within the comfort zone of HB & ST**
   - Good understanding of product development process
   - Excellent fit to network of experts and suppliers

5. **Quality and depth of the Technology & IP**

6. **Quality, size and reputation of the research group**

7. **Fundability of the exploration phase**



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Current Portfolio

DISPERTECH

High-resolution nano-particles tracking

Onnes Technologies

AMSTERDAM SCIENTIFIC INSTRUMENTS

vitroTEM

enabling in-vitro electron microscopy

RAPID PHOTONICS

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Introducing Naiad

The Future of Graphene Liquid Cell Fabrication

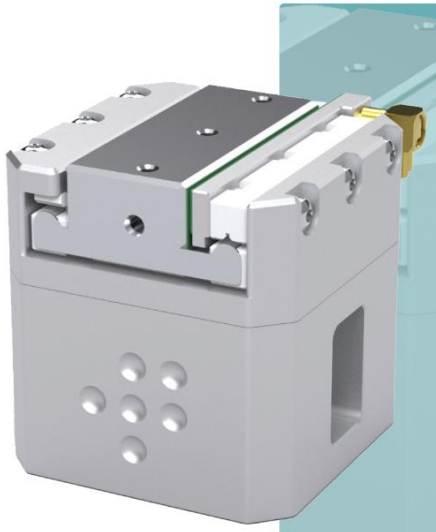
Our state-of-the-art technology simplifies the assembly of Graphene Liquid Cells (GLCs), eliminating the need for specialized sample holders. Naiad-1 enables TEM imaging of whole biological cells and nanoparticles in liquid, providing reliable and reproducible results.

Discover the versatile capabilities of Naiad:

- Simple Assembly: Assemble GLCs effortlessly in a matter of minutes, with no requirement for specialized sample holders.
- High-Quality Graphene Preparation: Ensure reliable and reproducible results with Naiad-1's high-quality graphene preparation.
- TEM imaging of dynamic processes: Reliable and reproducible TEM imaging of nanoparticle diffusion in liquid.
- Wide-Ranging Applications: Naiad-1 finds application across biology, materials science, and nanotechnology, rendering it the perfect tool for researchers across all fields.
- User-Friendly Interface: Our system features a user-friendly design, enabling effortless use for researchers of all levels.

Elevate your research efficacy and efficiency with Naiad - the frontier of Graphene Liquid Cell fabrication technology. Explore its potential today.

DOWNLOAD BROCHURE



arQtika LCW

Cryogenic nanopositioner utilizing walking piezo technology for low temperature environments

Onnes Technologies is proud to offer cryogenic nanopositioner that is reliable, robust and dissipates extraordinary little heat.

Download Brochure > Contact Us >

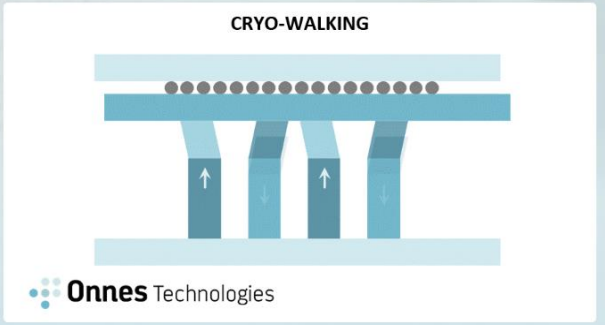
Cryo-walking technology

Game changer for cryogenic nanopositioning

Over a decade ago, the walking piezo actuator was introduced, primarily targeting the semiconductor industry, where reliability, long-term stability, and high position resolution are of utmost importance.

Onnes Technologies takes great pride in offering this revolutionary technology for cryogenic applications. With extensive improvements and successful implementation, we have adapted and refined the walking piezo technology specifically for nanopositioning in cryogenic environments even below 10 mK. In 2019, we named this remarkable technique as Cryo-Walking.

Distinguished as the sole supplier capable of implementing walking piezo technology for ultra-low temperatures, Onnes Technologies leads the way in cryogenic nanopositioning solutions. Experience the pinnacle of reliability, stability, and precision with Cryo-Walking for ultra-low temperature nanopositioning.



Thank you!

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