



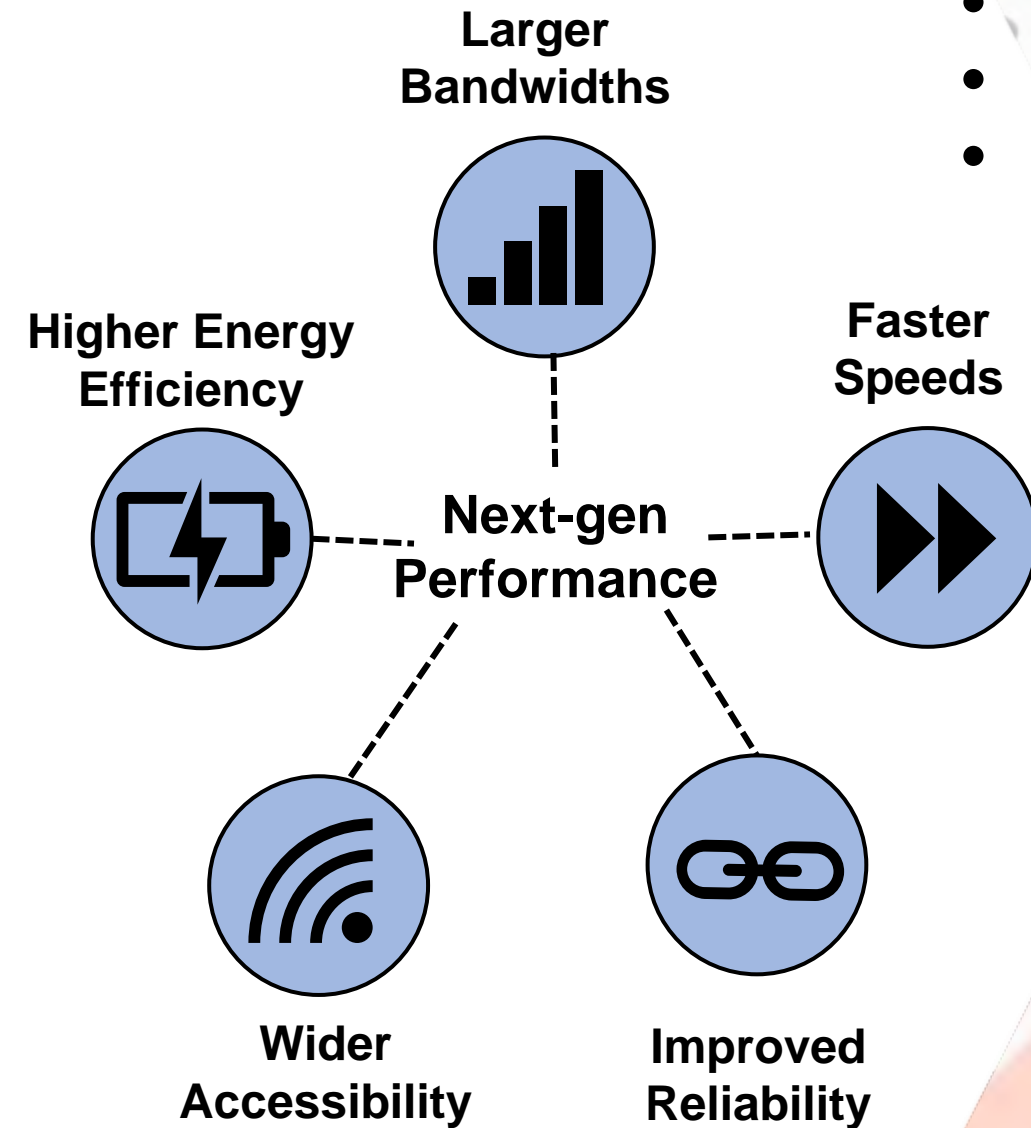
# SIXLINE

SEMICONDUCTOR

*Unlocking Nature's Perfect  
Semiconductor for Next-Gen  
Electronics*

# Growth of Next-Gen Wireless

- Personal electronics >8B devices by 2030
- Internet of Things (IoT): >50B devices by 2030
- Advanced military communication



# Current Materials Cannot Meet Needs



## Next Generation RF Material Requirements

- Operate at higher frequencies and lower power
- Integrate directly with computing/logic



**Current materials silicon and gallium arsenide (GaAs) are unable to meet needs**

### Silicon

- Logic/computing material
- Direct integration
- Cheap
- Low frequencies

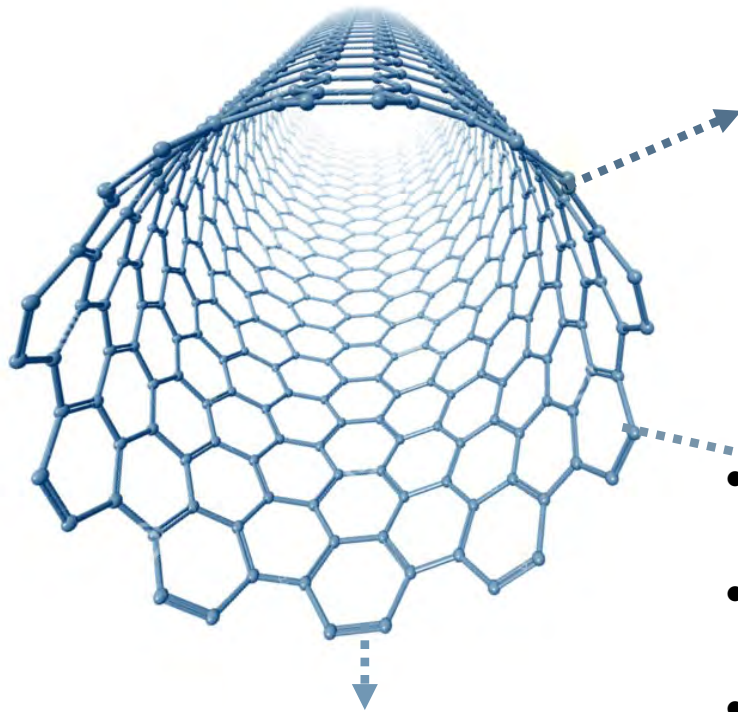
### GaAs

- High-performance RF material
- Can't integrate directly with Si
- Costly
- High frequencies

**Ideal Solution: Carbon nanotubes on silicon**

# Ideal Solution – Aligned Carbon Nanotubes

Layer of carbon atoms rolled into a cylinder



## SixLine's 1<sup>st</sup> Target: Radiofrequency (RF)

- 3-8x higher frequencies
- Larger data bandwidths
- On-chip integration with Si
- Intrinsic data quality, low noise at high frequency

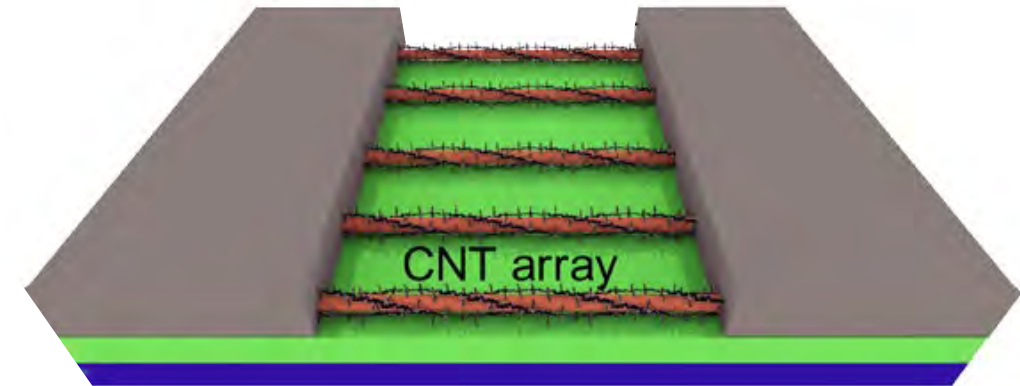
## Logic/Computing

- 5-20x lower energy consumption (2D FETs)
- Enables 3D circuits—route to advance Moore's Law
- 100 - 1000x lower energy consumption (3D FETs)

## Sensors/Displays

- 10-100x faster performance
- Mechanically resilient

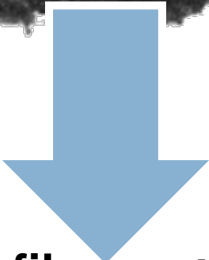
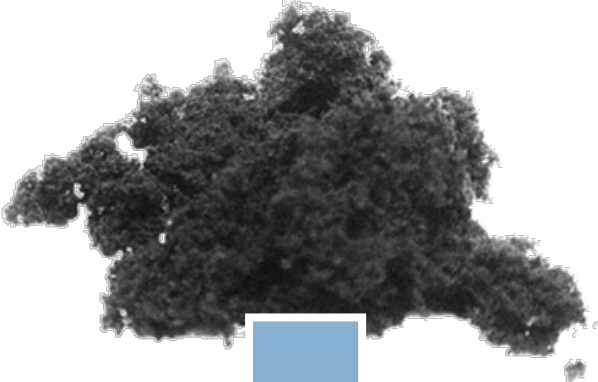
Carbon nanotubes must be organized into densely packed aligned arrays of multiple nanotubes to exploit their properties



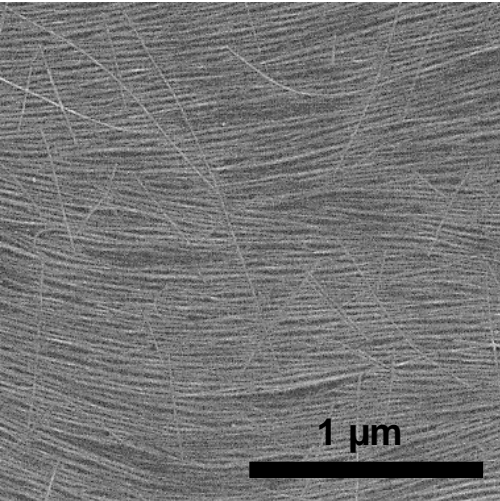
Semiconductor energy consumption is supply limited to  
25% consumption of prime energy by 2040

# Aligning Nanotubes: A 30-Year Challenge

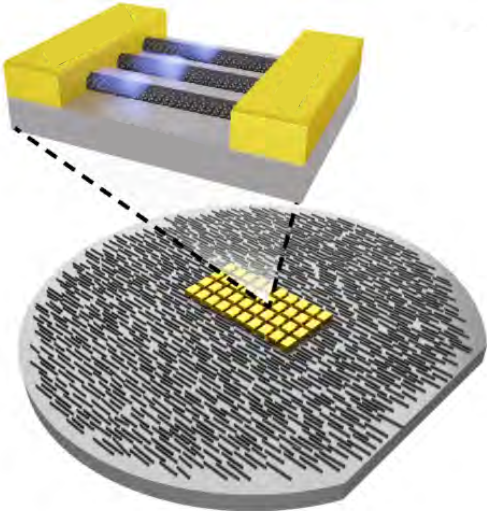
Random nanotube soot



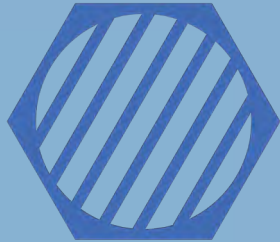
Aligned nanotube film



Next-gen devices



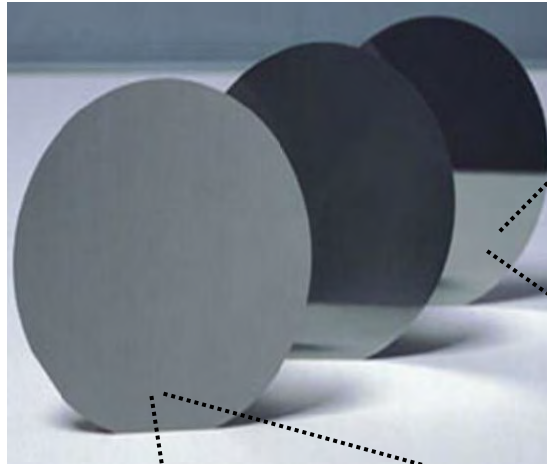
Transforming random nanotube soot into high-quality nanotube arrays using a scalable process for high-performance electronics



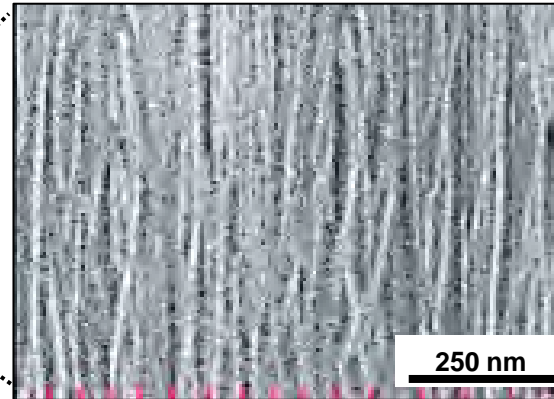
# Ideal Aligned Nanotube Arrays

Highly-aligned, registered arrays of semiconducting nanotubes from an industry scalable process

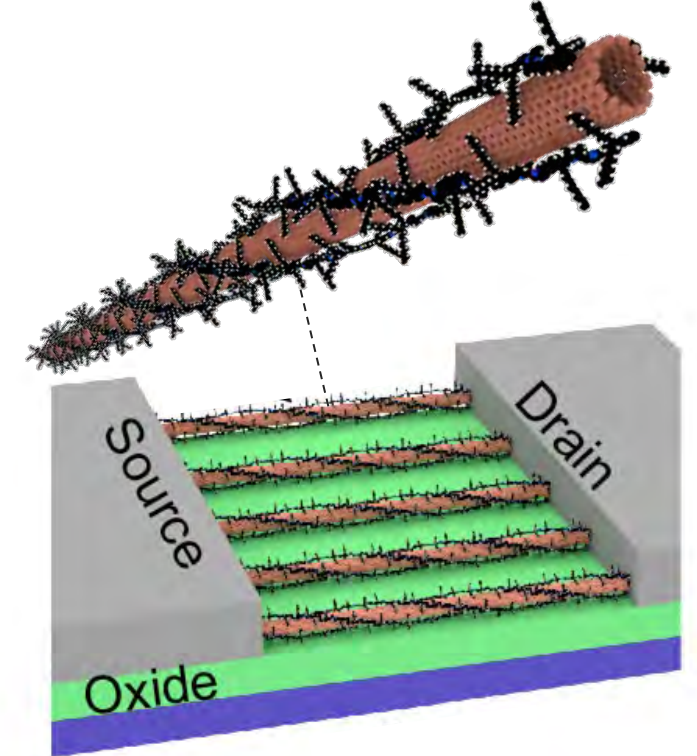
Industry scalable



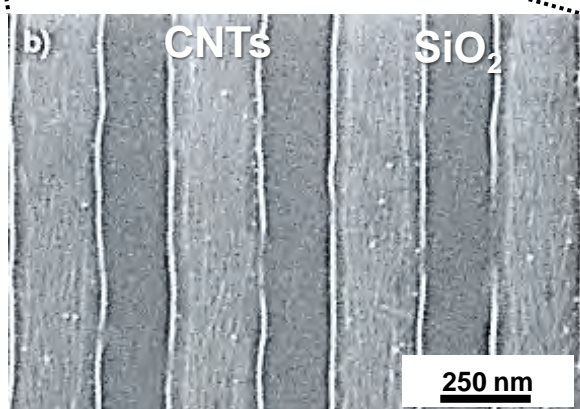
Highly aligned ( $\pm 7^\circ$ ) Nanotubes



High-performance nanotube electronic devices



Registered nanotube placement



- ✓ Compatible with conventional fabrication techniques
- ✓ Fast process—alignment occurs within seconds
- ✓ Room temperature/pressure
- ✓ Direct integration on silicon

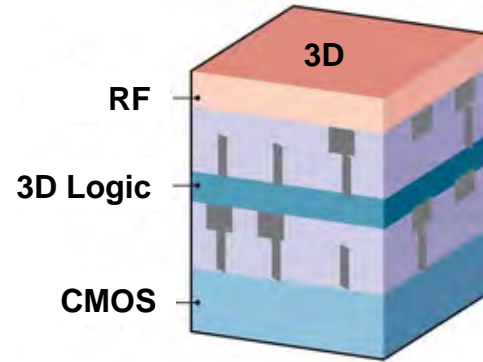
# Value Proposition: Performance & Cost

## Performance/Integration

3-8x Higher frequencies  
Larger bandwidths



3D integration with logic  
Lower energy consumption



Science 378, (2022)

Drop-in tool for  
semiconductor fabs



## 30 to 60% lower manufacturing cost compared to GaAs

**>50%**

LOWER RAW WAFER COST



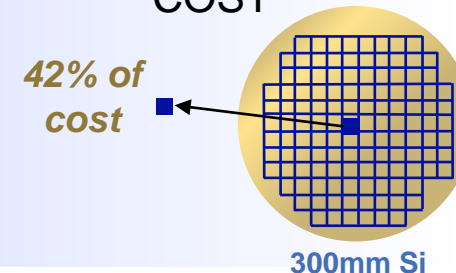
**250%**

MORE FAB FACILITIES



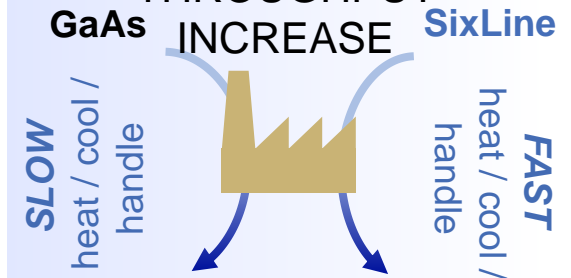
**58%**

LOWER DIE MFG COST



**65%**

THROUGHPUT INCREASE



# Strong Management & Research Team



**Katy Jenkins, PhD**  
*CEO, Co-founder*



- Co-inventor of technology
- 10 years technical/materials research experience
- Entrepreneurship training

**Prof. Mike Arnold, PhD**  
*Chief Technical Advisor, Co-founder*



- Internationally recognized nanotube expert
- Co-inventor of technology
- Professor at UW-Madison

**Jeff Moore**  
*Strategy/Commercial Support*



- >20 years startup experience
- Former COO and CFO at Virent
- Raised \$25M+ in non-dilutive funding at last startup prior to acquisition

**Prof. Padma Gopalan, PhD**  
*Technical Advisor*



- Expert in nanotube assembly and chemistry
- Co-inventor of technology
- Professor at UW-Madison

**Significant amount of materials, industry, and startup expertise**

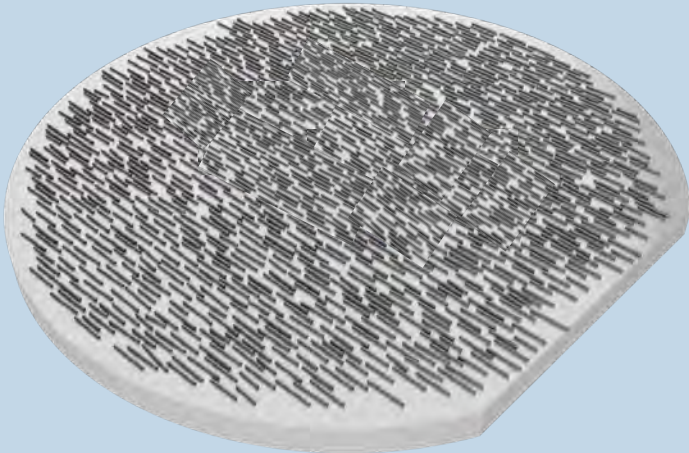


# Commercial Product Path

SixLine will develop and sell (1) aligned nanotube films, (2) nanotube alignment process equipment, and (3) nanotube materials

## Aligned Nanotube Films

- ❖ Accelerate industry transition and seed demand
- ❖ Focus on finding early adopters



## Nanotube Process Equipment

Performs alignment process and integrates into fab lines



Device fabs

Finding credible partner

## Nanotube Materials

Feedstock for process equipment



Nanotube materials will maximize recurring SixLine revenue (\$2-20M/customer)

# SixLine Tech has Large Potential Markets

## Wireless Materials Market

**\$2.1B**  
CAGR of 8.8%

## Computing Materials Market

**\$11.3B**  
CAGR of 3.6%

## Semiconductor Fabrication Equipment Market

**\$119B**  
CAGR of 8%

## Application Markets

Wireless Components

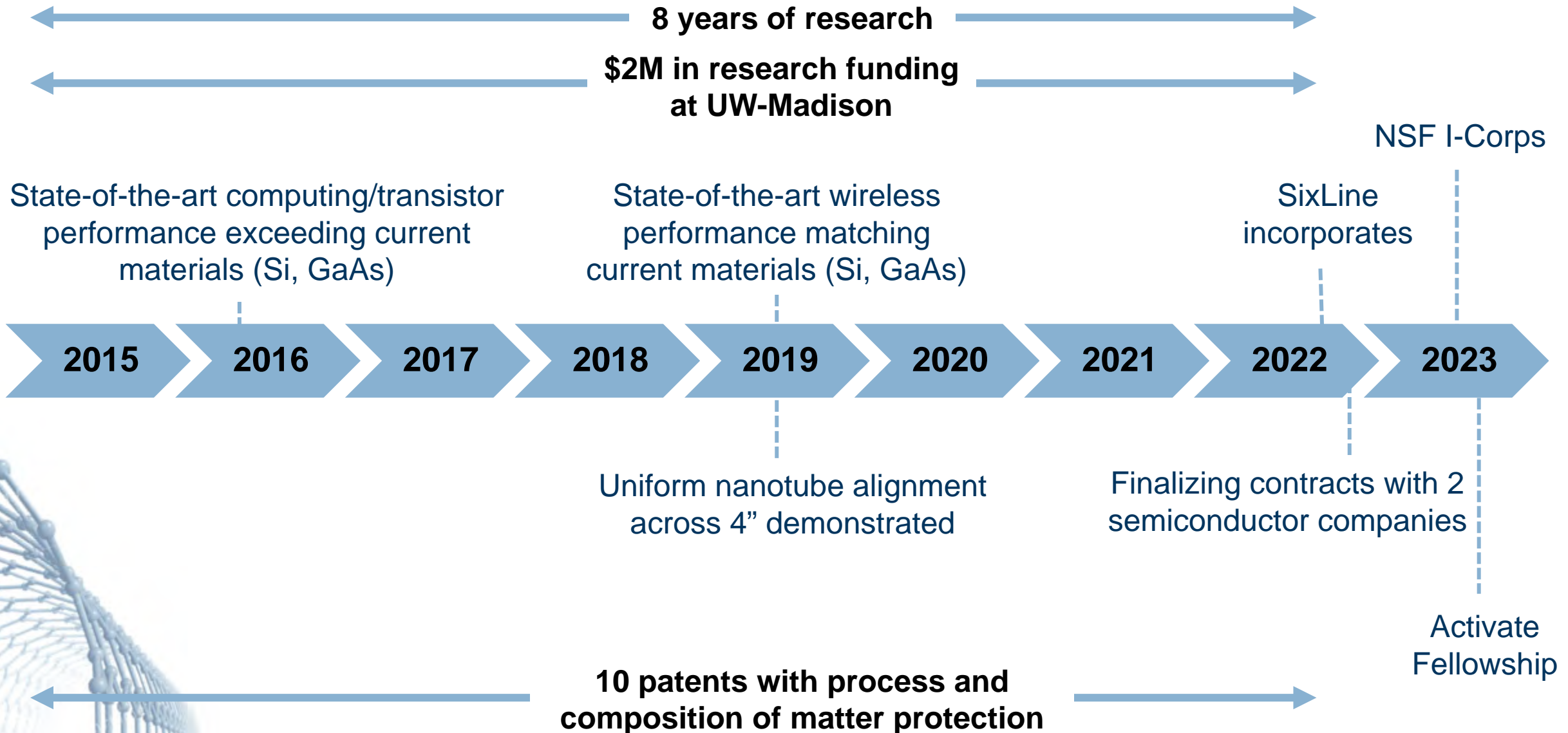
**\$15B**  
CAGR of 16%

Biosensors

**\$24.9B**  
CAGR of 8%

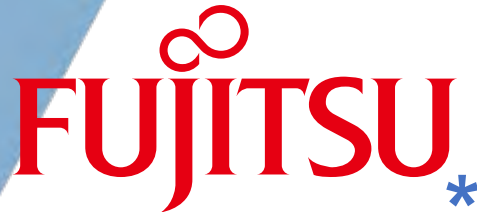
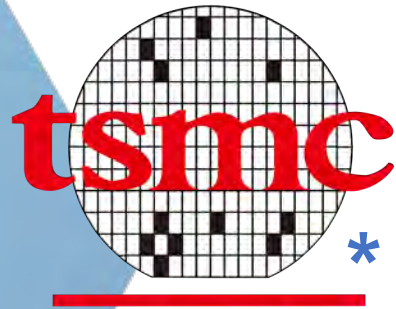
**SixLine's 1<sup>st</sup> Target Total Market**

# Strong Company & Technology Traction



# Exit Strategy

## Wireless/Computing Device Companies



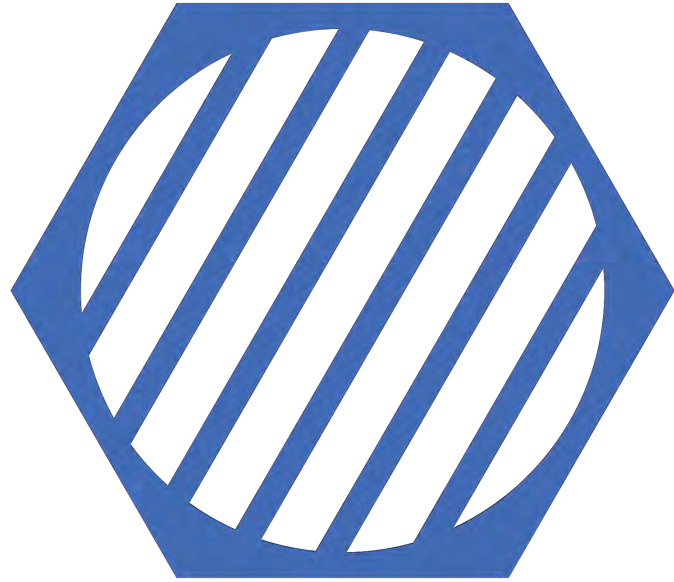
## Equipment Manufacturers



## Semiconductor Fabs



\* Company conducts nanotube-related research



**SIXLINE**  
SEMICONDUCTOR

**Produces nanotube  
materials/arrays enabling next-  
gen electronic performance**

- Overcomes 30-year challenge to leverage aligned carbon nanotubes
- Significant performance and cost advantages
- Comprehensive IP library
- Strong industry engagement
- Broad application across multiple device markets



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SEMICONDUCTOR

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Semiconductor for Next-Gen  
Electronics*



**Katy Jinkins, Ph.D.**  
Co-founder and CEO

Materials  
Scientist/Engineer

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