

3D Nanoparticle Sorter

high- resolution, high- range, high- throughput on- chip nanofluidic particle sorter for medical diagnostics

The first nanofluidic device for on- chip, high- resolution, high- range, high- throughput nanoparticle sorting and metrology for medical, national security and forensic applications.

Annual Sales Forecast for USA *				Innovation Status		Idea
Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling	Development Status	Proprietary Protection Status	Concept Score
Ultra Low	\$24	\$1.6 M	\$23.7 M	2 of 5 Successful Prototypes	2 of 5 Patent Pending	35 <small>29 is Average</small>
Low Support	\$23.4 M	\$97.2 M	\$306.9 M			
Medium Support	\$190.3 M	\$722.5 M	\$2.0 B			
High Support	\$522.1 M	\$2.0 B	\$5.5 B	Remaining Time & Cost to First Sale		
Ultra High	\$978.4 M	\$3.8 B	\$10.1 B	1-2 yrs	\$100k-\$1M	

3D Nanoparticle Sorter - *high- resolution, high- range, high- throughput on- chip nanofluidic particle sorter for medical diagnostics*

Final Decision Maker: People who will benefit from emerging lab- on- a- chip applications including: rapid and inexpensive medical diagnostics and criminal forensics; improved point- of- care nanoparticle- based drug delivery or gene therapy; sensitive, accurate pathogen detection.

Researchers at the National Institute of Standards and Technology (NIST) and Cornell University have built upon a process for manufacturing integrated circuits at the nanometer (billionth of a meter) level and used it engineer the first- ever nanoscale fluidic (nanofluidic) device with complex three- dimensional surfaces. Among the potential applications for this technology are: the processing of nanomaterials for manufacturing; separation and measuring of complex nanoparticle mixtures for drug delivery; gene therapy and nanoparticle toxicology; and the isolation and confinement of individual DNA strands for scientific study as they are forced to unwind and elongate within the shallowest passages of the device.

Using a novel nanofabrication process that they developed (see "[3D Nanofabrication Process](#)" Business Simulation Report on this site), inventors Stavis, Gaitan and Strychalski have fabricated a 3D nanofluidic device with a "staircase" structure for sorting nanoparticles. The "steps" in this staircase -- each level give the device a progressively increasing depth from 10 nanometers (approximately 6,000 times smaller than the width of a human hair) at the top to 620 nanometers (slightly smaller than an average bacterium) at the bottom -- confer the ability to manipulate nanoparticles by size in the same way a coin sorter separates nickels, dimes and quarters. The researchers have demonstrated size exclusion of different sized nanoparticles and are currently working to separate and measure mixtures of different- sized nanoparticles.

The 3D Nanoparticle Sorter is patent pending and is available for exclusive or non- exclusive licensing. Collaborative research opportunities are available.

\$100 for one chip

Seeking: Purchase, Investment, Manufacturing/ R&D

Email Inventor(s)
 Link to Website With More Info
 Link to YouTube Video
 Inventor(s) Open to Consulting Requests
 Agree to use Fair Contract
 Invention can be exported

* Consumption sales forecast. Does not include "Random" events or Inventory Fill . Forecast is for Year 1 for Large or Year 2 for Small Companies. Forecast should be read as ... With Low marketing support there is an 80% odds of achieving sales of at least...

Report Assumptions and Inventor(s) Commentary

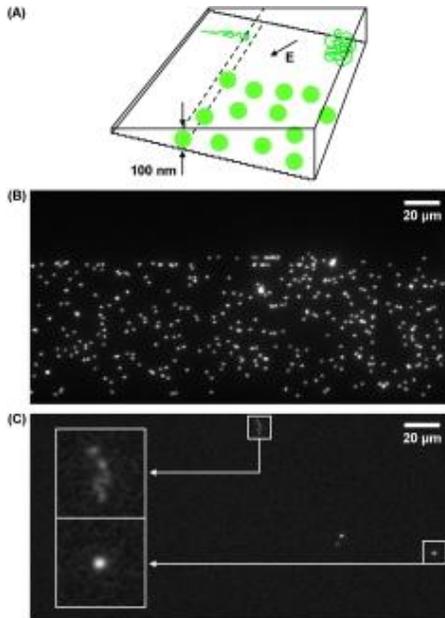
Inventor(s) Assumptions	"Most Likely" Estimate	Confidence	Inventor(s) Commentary Data Source or Basis for Assumptions
# of Possible Final Decision Makers	1,000,000	20%	This process will be used to sort nanoparticles for medical therapeutic application
Revenue per First Purchase	\$100.00	20%	
% that will Repeat	10%	20%	
Number of Annual Repeats	2	20%	
Revenue per Repeat Purchase	\$100.00	20%	
Reseller (Trade) Margin	N.A.	N.A.	
Producer Profit (EBITD)	24%	20%	Once in production, after initial investment costs, the cost to manufacture the device should be trivial due to batch fabrication and nanoscale amount of material.

Innovation Status			
Development Status	2 of 5 Successful Prototypes		A nanoparticle sorting device based on 3D nanofluidic technology has been built and tested at NIST.
Cost to First Sale (remaining)	\$100k-\$1M	20%	
Time to First Sale (remaining)	1-2 yrs	20%	
Confidence in Concept Claims made in description		40%	A working prototype has been built and tested by NIST and Cornell researchers.
Proprietary Protection Status	2 of 5 Patent Pending		Patent applications have been filed.

Concept Score & Diagnostics						
 Merwyn Concept Score With Confidence Bands			Concept Diagnostics	Red	Yellow	Green
			Percentile Group	Bottom 40%	Middle 40%	Top 20%
Pessimistic 80% odds of at Least	Most Likely 50% odds of at Least	Optimistic 20% odds of at Least	Overt Benefit			
			Reason to Believe			
24%	35%	47%	Dramatic Difference			

Inventor Commentary & Alternative Development Scenarios
Inventor(s) Sales Goals

Minimum Goal	N/ A	Current GOAL	N/ A
--------------	------	--------------	------



**{A} Schematic of 3D nanofluidic device operation
{B} Fluorescence micrograph of nanoparticle size exclusion
{C} Fluorescence micrograph of DNA manipulation.**

Inventor(s) Commentary:

CURRENT SALES FORECAST

Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$24	\$1.6 M	\$23.7 M
Low Support	\$23.4 M	\$97.2 M	\$306.9 M
Medium Support	\$190.3 M	\$722.5 M	\$2.0 B
High Support	\$522.1 M	\$2.0 B	\$5.5 B
Ultra High	\$978.4 M	\$3.8 B	\$10.1 B

If MARKETING CONCEPT Improved

(Increase Concept Score by +20 Points)

Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$39	\$2.6 M	\$38.4 M
Low Support	\$38.8 M	\$159.5 M	\$481.0 M
Medium Support	\$309.6 M	\$1.2 B	\$3.1 B
High Support	\$851.7 M	\$3.3 B	\$8.6 B
Ultra High	\$1.6 B	\$6.3 B	\$15.8 B

If PRODUCT/ SERVICE Improved

(Increase Repeat Rate & Number of Repeats by 30% and Revenue Per Purchase 20%)

Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$25	\$1.7 M	\$24.3 M
Low Support	\$25.4 M	\$100.6 M	\$313.8 M
Medium Support	\$205.4 M	\$749.7 M	\$2.0 B
High Support	\$563.4 M	\$2.1 B	\$5.6 B
Ultra High	\$1.0 B	\$3.9 B	\$10.2 B

If MARKETING CONCEPT and PRODUCT/ SERVICE Improved

(Increase Concept +20 Points, Repeat Rate & Number of repeats by 30% and Revenue per purchase 20%)

Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$40	\$2.7 M	\$39.1 M
Low Support	\$41.0 M	\$163.3 M	\$496.2 M
Medium Support	\$332.2 M	\$1.2 B	\$3.2 B
High Support	\$906.4 M	\$3.4 B	\$8.9 B
Ultra High	\$1.7 B	\$6.4 B	\$16.5 B

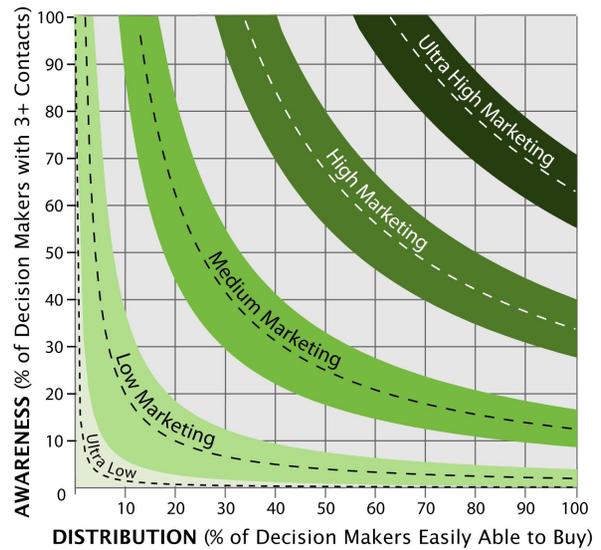


Additional Details

Fair Market Royalty (%)					
	Conservative - 80% Odds Royalty Percentage		Most Likely - 50% Odds Royalty Percentage		Aggressive - 20% Odds Royalty Percentage
At CURRENT State & Status	1.6%		3.3%		5.4%
Sales & Marketing Support Level	Annual Inventor Royalty Revenue			3 Year Value to Inventor If 50% Odds	
	80% Odds	50% Odds	20% Odds		
Ultra Low Support	\$73,000	\$240,000	\$510,000	\$710,000	
Low Support	\$1.4 M	\$4.0 M	\$8.2 M	\$12.0 M	
Medium Support	\$8.8 M	\$26.6 M	\$54.7 M	\$79.9 M	
High Support	\$25.4 M	\$72.8 M	\$154.3 M	\$218.5 M	
Ultra High Support	\$49.7 M	\$138.7 M	\$284.4 M	\$416.1 M	

Sales & Marketing Support Level Assumptions				
Sales & Marketing Support Level	Sample Numbers		% Aware x % Distribution (Aware & Able)	Inventor Estimate of Odds
	% Distribution	% Awareness		
Ultra Low Support (Word of Mouth)	5%	3%	0.2%	N/A
Low Support (Small Company)	20%	10%	2%	N/A
Medium Support (Medium Sized Company)	50%	25%	13%	N/A
High Support (Large Company)	75%	45%	34%	N/A
Ultra High Support (Mega or Niche)	90%	70%	63%	N/A

Graph of EQUIVALENT (Awareness x Distribution) Combinations



NAICS Industry Codes For This Invention
32541 - Pharmaceutical and Medicine Manufacturing

Patent Numbers that apply to this Product/ Service
61/120,864
61/205,577

Inventor(s) PEDIGREE	
Years EXPERIENCE in related industry	20
GRANTED Patents	9
Licensing Deals SIGNED	2
Innovations that have SHIPPED	2

For USA Patents: Utility Patent = 7 digit number, Design Patent starts with D, Planet Patent starts with PP. Provisional Application "61/ xxx,xxx", Non provisional application "12/ xxx,xxx", Design patent application "29/ xxx,xxx"

CAUTION: This Merwyn Business Simulation Research Report includes no warranty or guarantee. Results and opinions should be considered rough and directional in nature. This is because the report is based upon inventor-supplied data and simplified modeling methods. If you are looking to invest, distribute, purchase or become involved with this innovation, in any way, we strongly urge you to validate the inventor data and sales forecasts BEFORE committing yourself or your resources. Merwyn Research, Inc. shall not be responsible for any liability or damages arising out of the failure to perform such investigation and validation. Changes in the concept description, product, pricing, or input assumptions will almost certainly change results.



Additional Forecasts for Other Countries

Annual Sales - Probability Forecast - for Canada 			
Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$3	\$180,000	\$2.6 M
Low Support	\$2.6 M	\$10.8 M	\$34.0 M
Medium Support	\$21.1 M	\$80.1 M	\$217.3 M
High Support	\$57.9 M	\$223.5 M	\$604.9 M
Ultra High	\$108.4 M	\$419.4 M	\$1.1 B

Assumptions: exchange rate of \$1.00 US = \$1.01083 CAN; population of 33,390,141

Annual Sales - Probability Forecast - for United Kingdom 			
Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	£2	£160,000	£2.4 M
Low Support	£2.4 M	£9.8 M	£30.9 M
Medium Support	£19.1 M	£72.7 M	£197.3 M
High Support	£52.5 M	£202.9 M	£549.0 M
Ultra High	£98.4 M	£380.6 M	£1.0 B

Assumptions: exchange rate of \$1.00 US = £0.50458 UK; population of 60,776,238

Listing #: USA.75.032709.034

Page 5 of 5

Date Posted: 2009-04-13

©2008. Eureka! Institute. All Rights Reserved. Patents Granted or Pending Eureka! Ranch International www.EurekaRanch.com (513) 271-9911