

## Recirculating Temperature Wave Focusing Chromatography

*high sensitivity chromatography for chemical analysis*

This invention is a completely different way to perform chromatographic chemical analysis and enables operations that are not possible with conventional methods.

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	\$0	\$37,000	\$430,000	<b>1 of 5</b> In Development	<b>2 of 5</b> Patent Pending	<b>14</b> <small>29 is Average</small>
Low Support	\$440,000	\$1.8 M	\$5.3 M			
Medium Support	\$3.7 M	\$12.9 M	\$32.2 M			
High Support	\$10.7 M	\$36.0 M	\$87.9 M	<b>Remaining Time &amp; Cost to First Sale</b>		
Ultra High	\$20.4 M	\$68.6 M	\$166.0 M	1-2 yrs	\$100k-\$1M	

### Recirculating Temperature Wave Focusing Chromatography - *high sensitivity chromatography for chemical analysis*

**Final Decision Maker:** *chemical analysis labs in the fields of petrochemicals, environmental monitoring, forensics and law enforcement, food beverage and perfume manufacturing*

This invention is a method that allows chromatographic chemical analysis to be done in a completely different way than what was possible before. The method works by using a moving temperature "wave" that circulates around a chromatography column loop. The wave sweeps up and focuses the chemical compounds from a sample. Some compounds ride high on the wave and others ride low on the wave, so different compounds can be separated and individually measured. The shape of the wave can be manipulated in real time by the instrument user to perform operations that are not possible with conventional chromatography methods. For example, multiple, repeated (or even continuous) sample injections will be all be swept up together to form a single set of chromatographic peaks for ultra- high sensitivity measurements. High-concentration background compounds can be selectively removed from the wave so that trace chemicals can be quantitatively measured even from very complex and difficult samples. Also, the ability to resolve or distinguish similar compounds can be adjusted on- the- fly as the focused compounds are circulated, giving unprecedented capabilities for analysis and discovery of novel compounds.

This invention can be applied to a very wide range of problems where chromatographic methods are needed for trace analysis and/ or for use with complex samples. Example application areas include: biology and medicine, petrochemical refining and manufacturing, and semiconductor manufacturing.

\$2,000 for one column cartridge

**Seeking:** *Purchase, Investment, Manufacturing/ R&D*

 <b>Email Inventor(s)</b>	 <b>Link to Website With More Info</b>	 <b>Link to YouTube Video</b>	 <b>Inventor(s) Open to Consulting Requests</b>	 <b>Agree to use Fair Contract</b>	 <b>Invention can be exported</b>
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\* 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	30,000	20%	Sum of possible user of chromatographic analysis in areas of petroleum refining, chemical manufacturing, semiconductor manufacturing, and scientific R&D services.
Revenue per First Purchase	\$100,000.00	30%	Based on price for currently available high- end chromatography systems.
% that will Repeat	50%	20%	Assuming purchasing of additional or replacement column cartridges.
Number of Annual Repeats	2	20%	Assuming necessary repurchasing of columns/ cartridges as they wear out.
Revenue per Repeat Purchase	\$2,000.00	20%	Cost estimate based on typical retail cost of gas chromatography columns plus additional cost for cartridge hardware and packaging
Reseller (Trade) Margin	N.A.	N.A.	
Producer Profit (EBITD)	8%	20%	Assuming a profit margin somewhere between medical equipment manufacturing and electronic equipment manufacturing

Innovation Status			
Development Status	1 of 5 In Development		initial proof- of- concept experiments completed.
Cost to First Sale (remaining)	\$100k-\$1M	30%	Assuming 2 or 3 full time technical employees for one year at a small, established company with expertise in chromatographic systems.
Time to First Sale (remaining)	1-2 yrs	30%	proof- of- concept experiments done, 2 different prototypes built. Assuming work left to be done is to adapt to a company's existing chromatography systems.
Confidence in Concept Claims made in description		50%	Proof- of- concept experiments have been done for gas chromatography mode of invention.
Proprietary Protection Status	2 of 5 Patent Pending		patent application filed 2009.

Concept Score & Diagnostics						
<b>Merwyn Concept Score</b> With Confidence Bands			Concept Diagnostics	Red	Yellow	Green
			Percentile Group	Bottom 40%	Middle 40%	Top 20%
<b>Pessimistic</b> 80% odds of at Least	<b>Most Likely</b> 50% odds of at Least	<b>Optimistic</b> 20% odds of at Least	Overt Benefit			
			Reason to Believe			
			Dramatic Difference			
12%	14%	18%				

Listing #: MBS.75.033009.005

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**Inventor Commentary & Alternative Development Scenarios**



Inventor(s) Sales Goals			
Minimum Goal	\$0.2 M	Current GOAL	\$0.5 M

Photo can go here

**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	\$0	\$37,000	\$430,000
Low Support	\$440,000	\$1.8 M	\$5.3 M
Medium Support	\$3.7 M	\$12.9 M	\$32.2 M
High Support	\$10.7 M	\$36.0 M	\$87.9 M
Ultra High	\$20.4 M	\$68.6 M	\$166.0 M

**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	\$1	\$94,000	\$1.0 M
Low Support	\$1.2 M	\$4.5 M	\$12.8 M
Medium Support	\$10.2 M	\$33.0 M	\$79.0 M
High Support	\$28.8 M	\$93.8 M	\$215.5 M
Ultra High	\$54.7 M	\$177.5 M	\$409.9 M

**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	\$0	\$39,000	\$440,000
Low Support	\$470,000	\$1.8 M	\$5.4 M
Medium Support	\$3.9 M	\$13.3 M	\$32.8 M
High Support	\$11.4 M	\$37.1 M	\$89.4 M
Ultra High	\$21.6 M	\$70.8 M	\$168.7 M

**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	\$1	\$100,000	\$1.1 M
Low Support	\$1.2 M	\$4.6 M	\$13.0 M
Medium Support	\$11.0 M	\$33.7 M	\$80.5 M
High Support	\$30.4 M	\$96.3 M	\$220.2 M
Ultra High	\$58.2 M	\$180.6 M	\$411.9 M

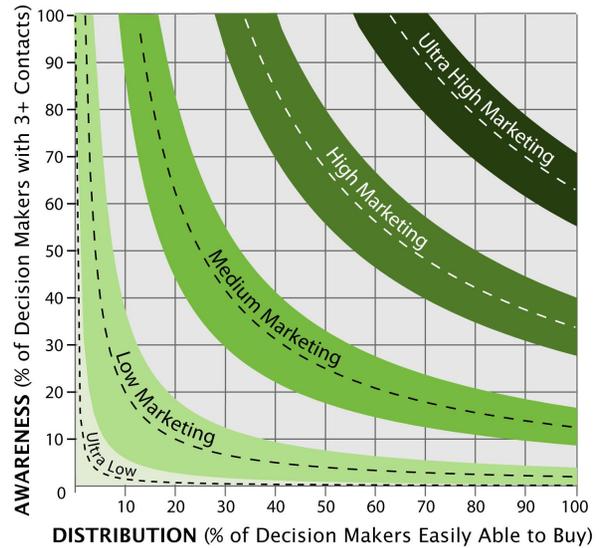
**Additional Details**



Fair Market Royalty (%)				
	Conservative - 80% Odds Royalty Percentage	Most Likely - 50% Odds Royalty Percentage	Aggressive - 20% Odds Royalty Percentage	
<b>At CURRENT State &amp; Status</b>	<b>0.5%</b>	<b>0.8%</b>	<b>1.2%</b>	
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	\$360	\$1,100	\$2,200	\$3,200
Low Support	\$6,100	\$17,000	\$33,000	\$50,000
Medium Support	\$41,000	\$110,000	\$210,000	\$330,000
High Support	\$120,000	\$300,000	\$580,000	\$900,000
Ultra High Support	\$220,000	\$570,000	\$1.1 M	\$1.7 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%	60%
Low Support (Small Company)	20%	10%	2%	50%
Medium Support (Medium Sized Company)	50%	25%	13%	20%
High Support (Large Company)	75%	45%	34%	10%
Ultra High Support (Mega or Niche)	90%	70%	63%	10%

**Graph of EQUIVALENT (Awareness x Distribution) Combinations**



NAICS Industry Codes For This Invention
33441 - Semiconductor and Other Electronic Component Manufacturing
32512 - Industrial Gas Manufacturing
32511 - Petrochemical Manufacturing
32411 - Petroleum Refineries
54171 - Research and Development in the Physical, Engineering, and Life Sciences

Patent Numbers that apply to this Product/ Service

Inventor(s) PEDIGREE	
Years EXPERIENCE in related industry	8
GRANTED Patents	4
Licensing Deals SIGNED	0
Innovations that have SHIPPED	0

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	\$0	\$4,200	\$47,000
Low Support	\$49,000	\$200,000	\$580,000
Medium Support	\$410,000	\$1.4 M	\$3.6 M
High Support	\$1.2 M	\$4.0 M	\$9.7 M
Ultra High	\$2.3 M	\$7.6 M	\$18.4 M

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	£0	£3,800	£43,000
Low Support	£45,000	£180,000	£530,000
Medium Support	£370,000	£1.3 M	£3.2 M
High Support	£1.1 M	£3.6 M	£8.8 M
Ultra High	£2.1 M	£6.9 M	£16.7 M

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

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