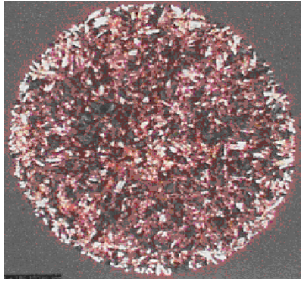


nanoLiter LLC Opportunities



Crystallography

217 Garfield Drive
Henderson, NV
USA
nanoliter.com,
Drew Sauter, President
702-882-5413



Drug Analysis

Dispensers



Defense Tools



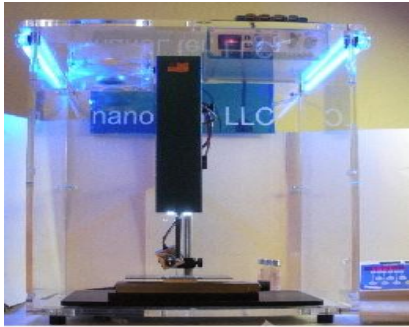
Robotic Systems



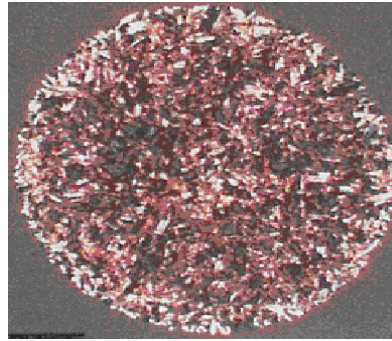
Android Dispensing, MS Systems



nanoLiter's LLC's Application Spaces.



MALDI, Other Dispensers



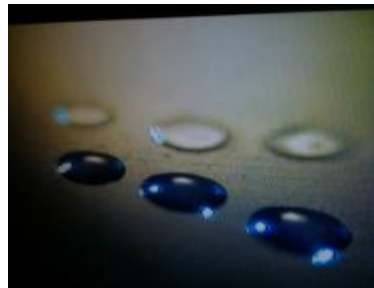
Crystallography



Marijuana, Drug Testing.



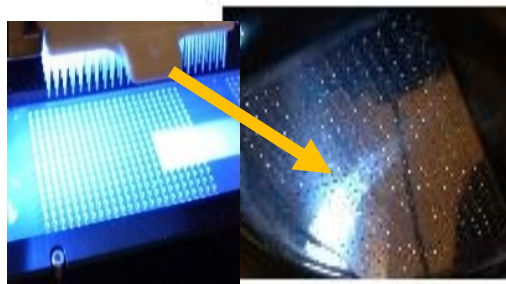
Defense



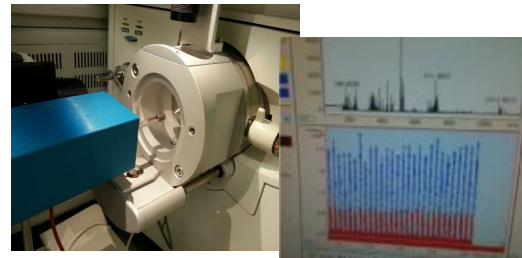
LO 3D Print



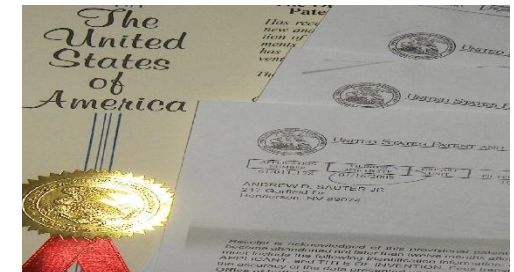
Android MS Dispensing



Highly Parallel Manufacturing.



Rapid MS Sample Input.



IP

INDUCTION BASED FLUIDICS, PATENTED, FOR LOW TECH APPS.

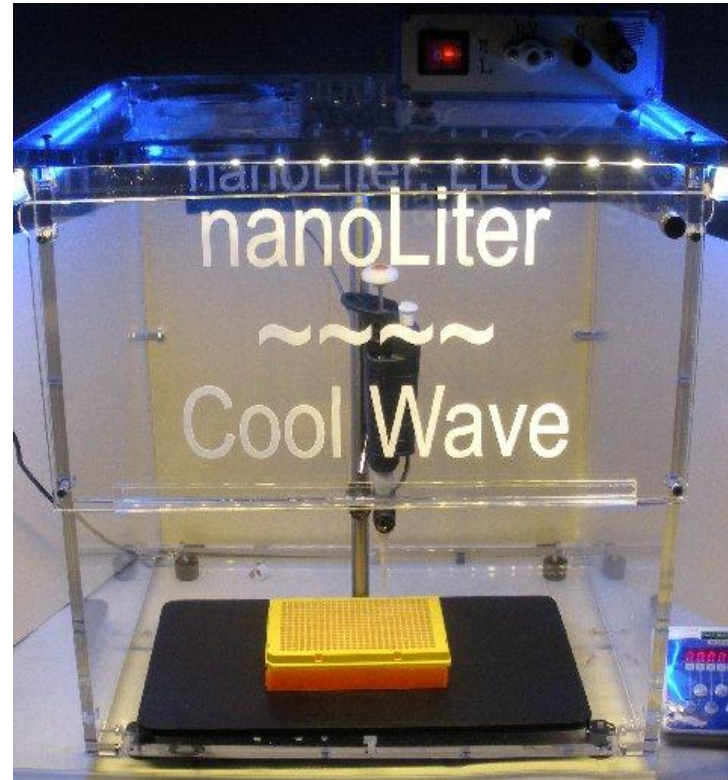
Morphs Common Devices Into NEW powerful non-touch nL dispensers for MALDI, ESI, TLC, PCR, microscopy, blood, glue, CBRN dispensing, SPE, crystallography, more!

We own a part of the future of these common devices & expendables.

Syringe



Pipette



Pump/s



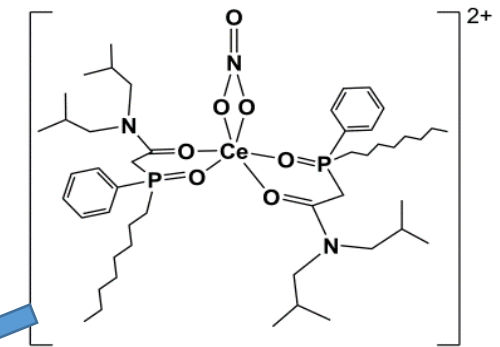
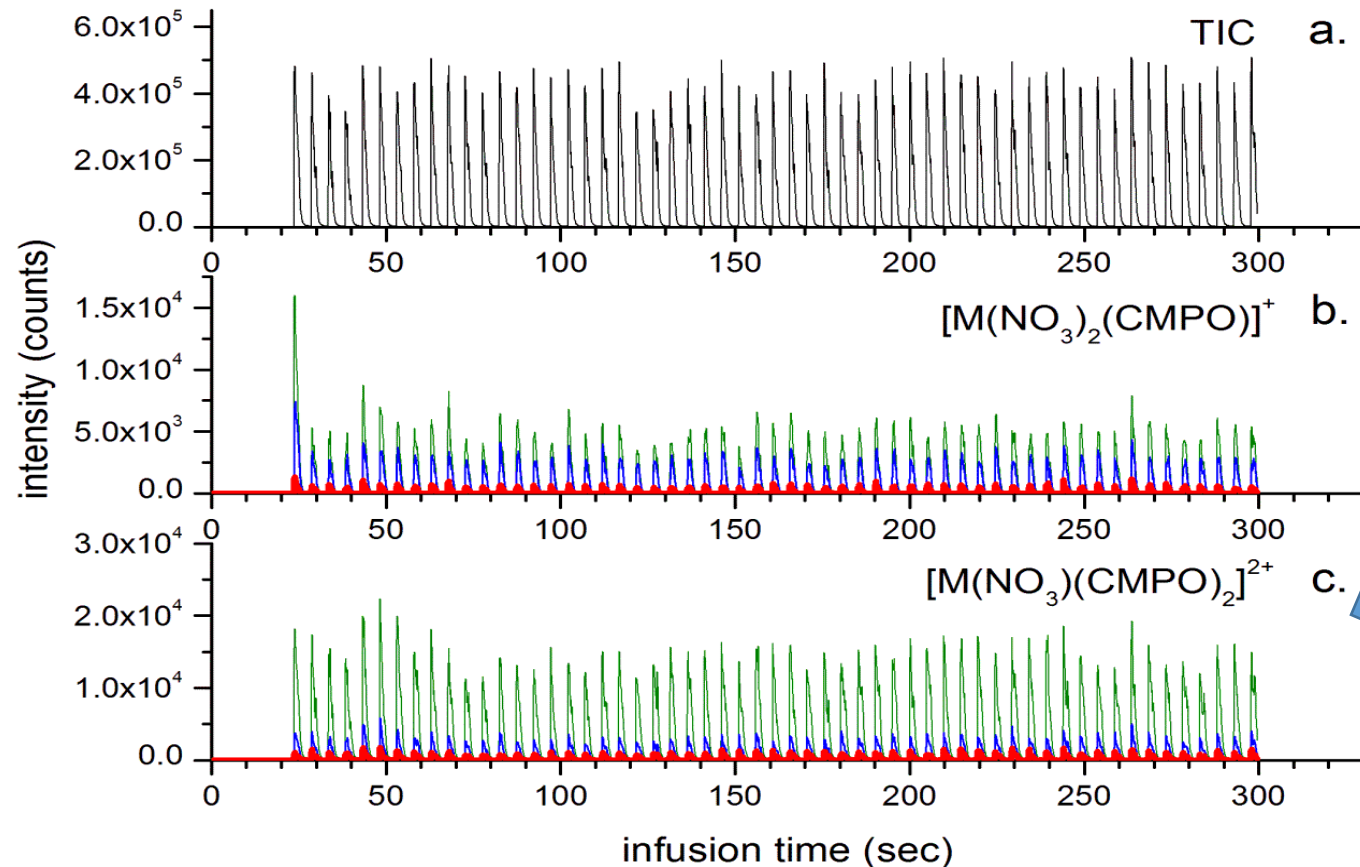
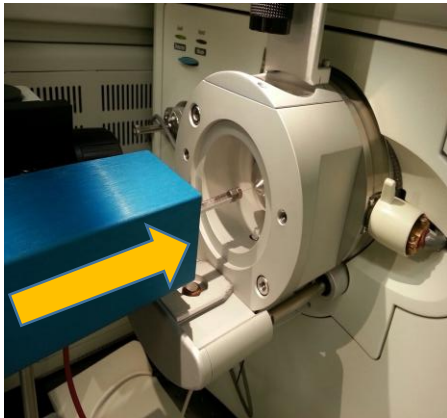
Expendables, for these devices, tips.

INDUCTION BASED FLUIDICS, PATENTED, FOR HIGH TECH APP, ESI.

High Technology, Mass Spectrometry and more.

Fastest, most efficient (100% or less), versatile and simplest MS sample introduction technology in the world !
non-touch, low volume, dispensers, treatment devices for MALDI and ESI.

Droplets into MS's,
Rapid & 100% in !

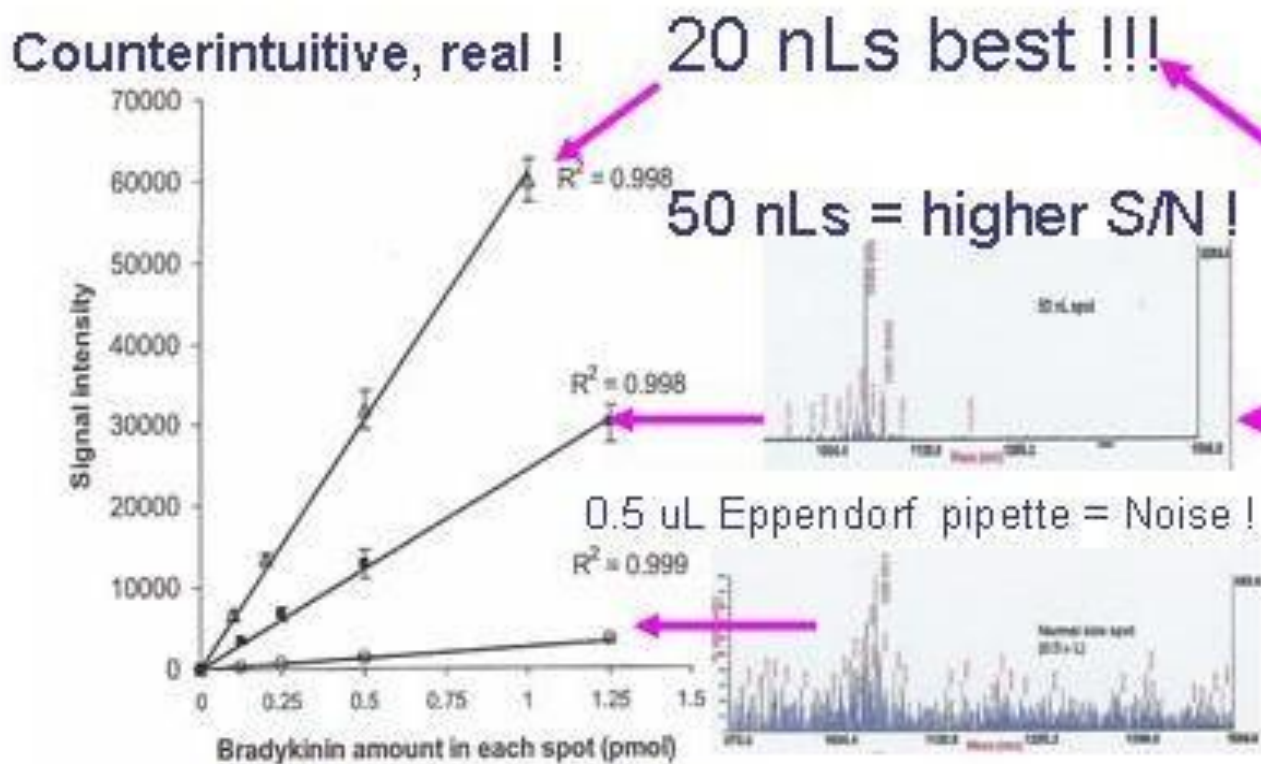


INDUCTION BASED FLUIDICS, PATENTED, FOR HIGH TECH APP, MALDI.

20 nLs yields 10 to 20 x the ion current than 0.5 uL MALDI sample!

nLs spatially concentrated, nLs evaporate rapidly = smaller crystals. Much less noise (See +eV, reflectron mode MS below.)

NIST, USF, JEOL, Genentech have published very similar observations for SIMS (RDX, cocaine), MALDI polymers, LDI and DART (8 drugs of abuse)! nL quantities of sample produce major increases in sensitivity as compared to uL samples acquired identically. Dr. Enke observes:” Astounding.”

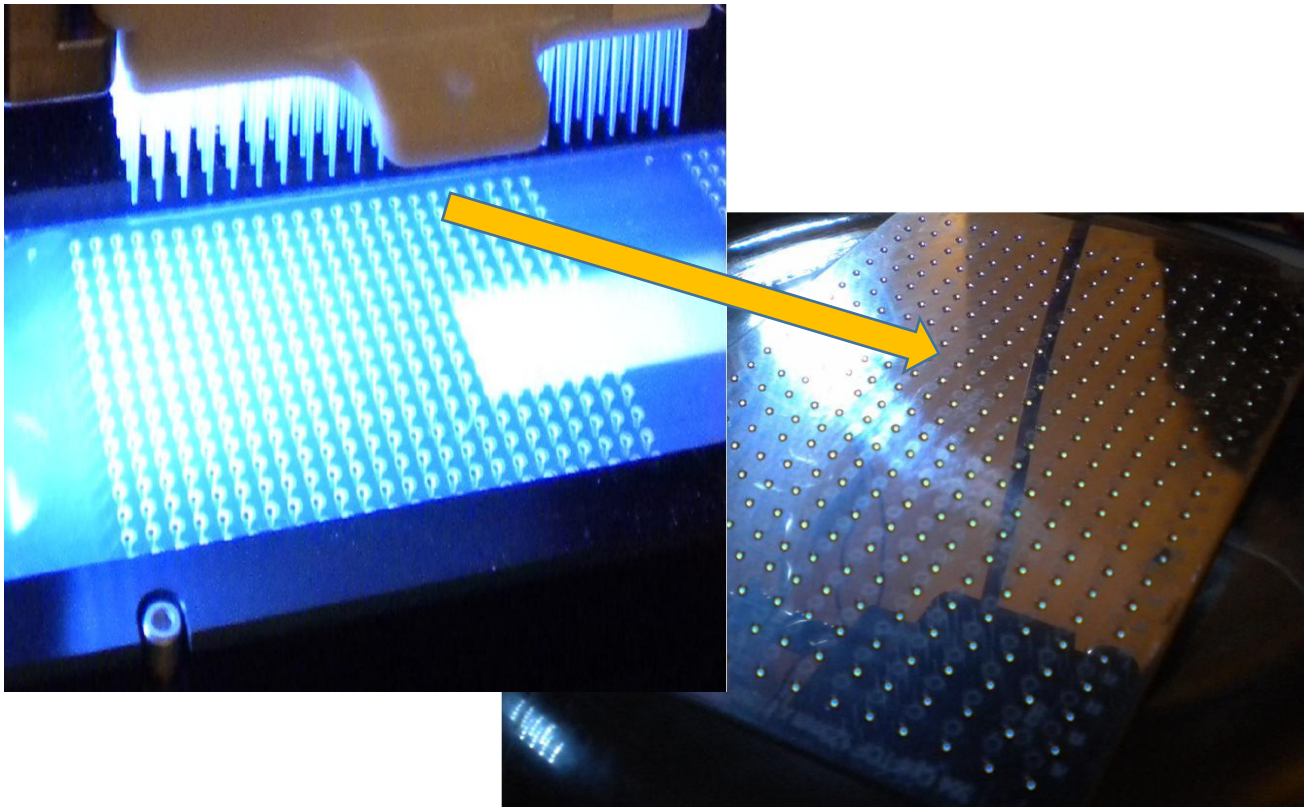


T. Tu, M. L. Gross, et al, JASMS, 8/08.



INDUCTION BASED FLUIDICS, PATENTED, FOR ROBOTICS.

Dispense time = One Millisecond.
384 Channel, Parallel Dispense.
Roche, Polypipettor. *



Dispense time = 250 Milliseconds + movement.
Ca. 25 nLs
Spark Holland, Alias



* Uses one source of energy for 384 channels. Directs liquids.

IBF User Successes.

IBF is being used by the US Army for classified agent dispensing projects and MS R&D w/ GoPro camera.



IBF being used for MS Analysis of Oligonucleotides. NEW!!! JMS paper w/ U of Cincinnati yields most sensitive analysis for oligonucleotides!

US Department of Energy is using IBF in the field to analyze radio-active elements at fg levels WITHOUT an ICP !

IBF is being used to introduce samples into a MS from an OPERATING battery at INL lab. App for TESLA here in Nevada?



USF, NIH, NIST & JEOL. publish that by using nLs for MALDI, SIMS, LDI & DART that MS sensitivity increases by 10,20-100x LITERALLY!

University of Wisconsin has used IBF for single cell MALDI identifying six new ocular proteins. We shot cells into an ESI at gov't lab.

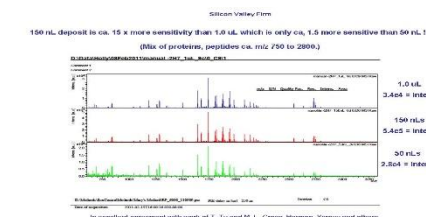


University of Illinois published that IBF can fly nanoLiters of liquids into levitated microliters to study wall-less reaction kinetics.

For Abbott, nanoLiter LLC used IBF to dispense PVA, w/ave. MW of 300,000 in pseudo 3D "printing." app.



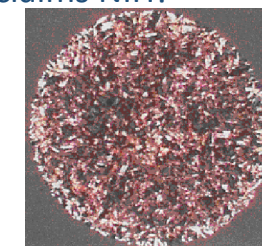
At Genentech, nanoLiter demonstrates 20 x improvement in MALDI sensitivity for proteins, peptides.



USF used IBF to make electrets.

NIH, in its first application of IBF, PTM's of tublin (glycosylation) were first identified, in actual brain cancer samples given a 100x sensitivity increase claims NIH!

Sciex offered to license IBF for ESI LCMS and for LC/MALDI. Parallel 8 channel IBF LC demoed with dyes.



nanoLiter morphs Roche polypipettor for Douglas and Spark Holland's systems for parallel or single channel millisecond nL dispensing, SPE, LC..

See more here. <http://www.nanoliter.com/nanoliterhasdone121213ver3.pdf> & some references, <http://nanoliter.com/references2014.pdf>

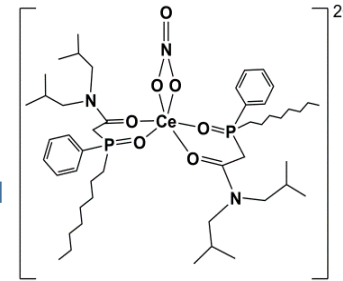
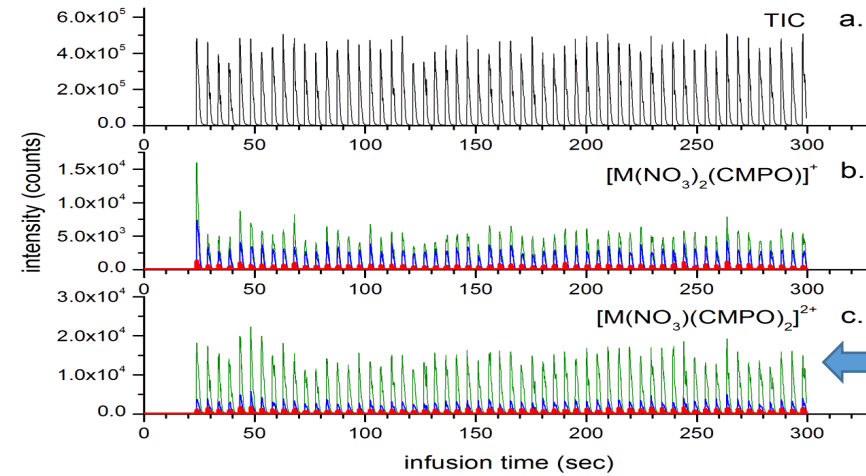
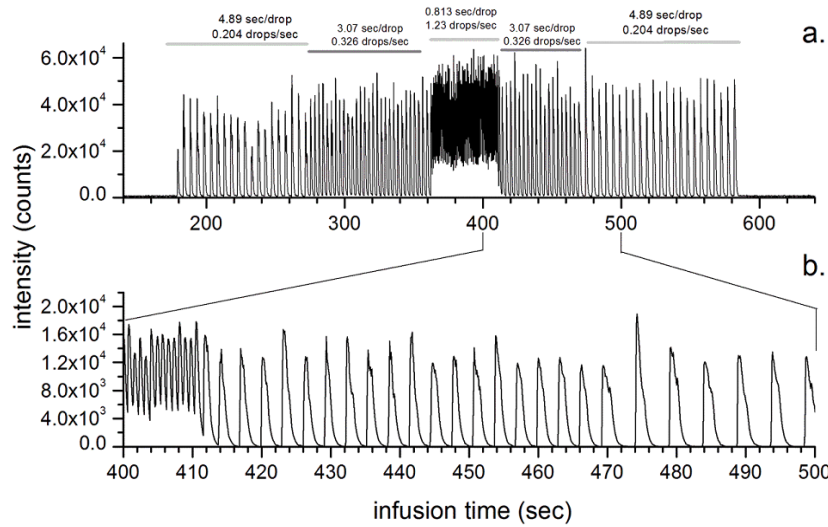
Example customers, clients: U's of Ill, WI, CA, Cinn., MUSC, Wash. U., USF, USU, US Army APG, ECBC and Natick, Abbott, Biogen Idec, Genentech, Amgen, Hitachi, Allergan, Spark, Douglas, NIH, NIST, USDOE INL, Ga Tech, UNH, Duquesne, NASA, Air Force, Air Force, and Sciex offered to license. +

MALDI ,ESI via ONE INTERNATIONALLY UNIQUE APPROACH, IBF!

Fastest (ms), Most Efficient (100% or less), Precise MS Sample Introduction System In The World!

(W or w/out a funnel. Acquire standard ESI MS for Oligo's, Drugs, Proteins,peptides, metals (+ Lanthanides, Actinides!), inorganic to fgs using old ion traps ! to ags w/ HR ToFs?)

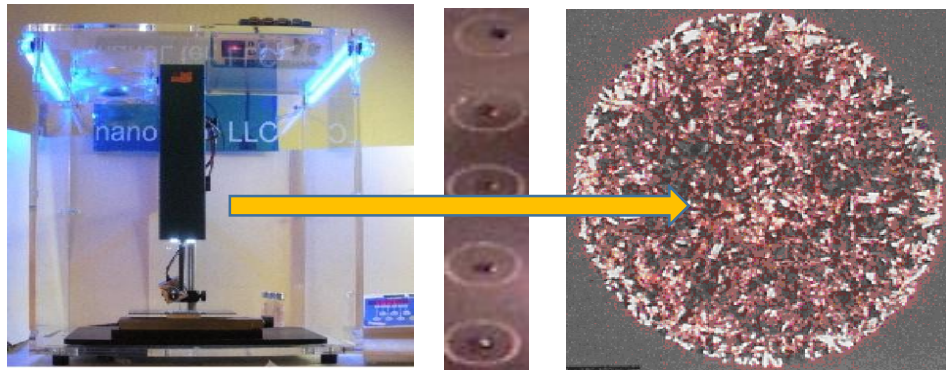
ESI



Positive ion profiles generated by individual drops. a. Total ion current. b. $[M(NO_3)_2(CMPO)]^+$. c. $[M(NO_3)(CMPO)_2]^{2+}$. Blue = Ce^{3+} , Green = Tb^{3+} , Red = Lu^{3+} .

The SAME DEVICE makes excellent MALDI, SIMS, LDI, other, crystals! Good for TLC ! Spatially concentrate matter easily !

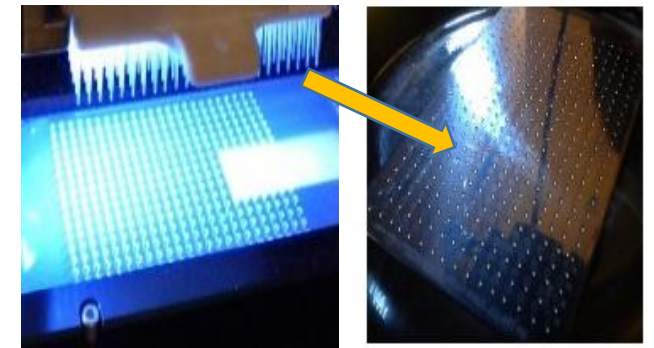
MALDI



Lo 3D Print!?



384 channel , 1 ms!



Nanoliter

ASSETS

- * IP 3 US Patents + 5 US pending patents. "nanoLiter Cool Wave" US trademark. Trade secrets. Six figures pending orders.
- * Hardware
 - Patented US Army Dispenser, the APG-X1. digital nanoLiter Programmable Wave for ESI, MALDI. Analogue nanoLiter Cool Wave™ Dispensers for ESI and MALDI and other applications like TLC and more. nanoliter CW™ pipette tip. nanoliter CW™ syringe tip. Many Power Supplies, misc. Circuits. Device computer drawings, pdfs. The Handheld Dispenser. Special hi spec. materials.
- * Very Valuable domain names.
 - nanoliter.com, picoliter.com, femtoliter.com, nanoLiterpipette.com, nanolitersyringe.com, nanoLiterpump.com, more.
- * Supplies & equipment
 - Tools, Office Equipment, Dispensers, 8 PC's, manufacturing tables.
- * Marketing material
 - Complete Booth. Scientific Pittcon Course. Computer lists. Scientific Publications. Poster sessions, advertisements, attendees lists.
- * Clients, customers: U's of Ill, WI, CA, Cin, MUSC, Wash. U., USF, USU, US Army APG, ECBC, Natick, Abbott, Biogen Idec, Genentech, Amgen, Hitachi, Allergan, Spark, Douglas, NIH, NIST, USDOE INL, Ga Tech, UNH, Duquesne, more. Sciex offer to license.
- * No Debt.
- * More The future of the microliter syringes, the pipette and pumps (LC's) that can be both dispensers **AND** ion sources.

Nanoliter

nanoLiter LLC

Device/s, Project, Partner/Team, Acquire IP, Invest, Purchase?

