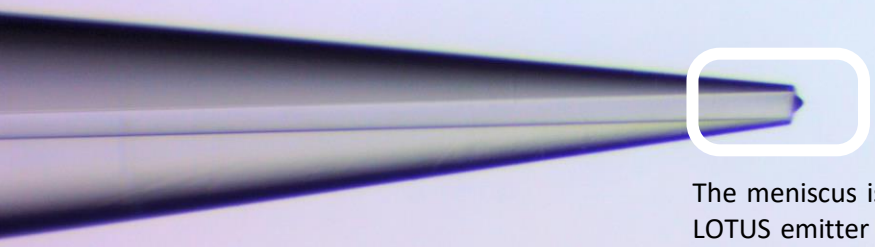
# LOTUS Sharp Singularity™

*"Water surrounds the lotus flower, but does not wet its petals"*
-- Buddha --



FOSSILIONTECH

The meniscus is anchored at the inner diameter of the LOTUS emitter because its surface is hydrophobic. This produces less evaporation, lower voltages, better ionization efficiency, and a more consistent spray.

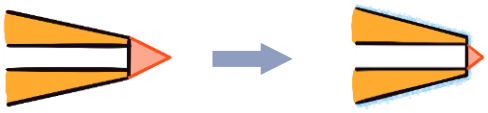
## More Peptide & Protein IDs, more consistently

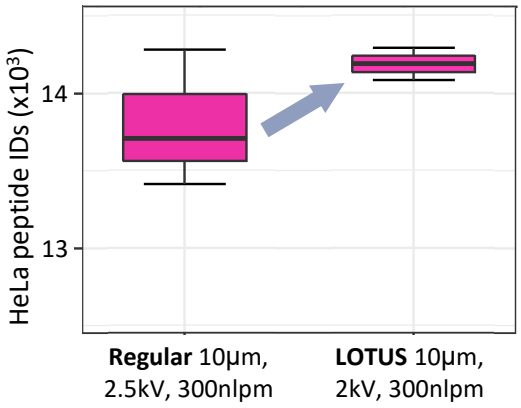
LOTUS vs Regular 10 µm Sharp Singularity Emitters comparison*:

- **3.3% more peptide IDs,**
- **5.5 fold reduction peptide ID variability**

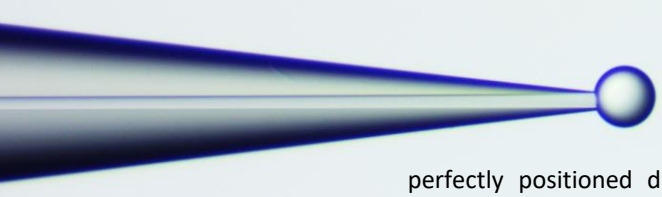
*Method: HeLa 50 ng injections, Ultimate 3000; Exploris 480, 75µm-200mm C18 1.7µm Waters Column. All emitters were conditioned by flushing two runs before analysis.

The LOTUS emitters lock the nano-electrospray meniscus inside the ID of the emitter. For the same emitter geometry, this results in a smaller meniscus, with a more stable anchorage.



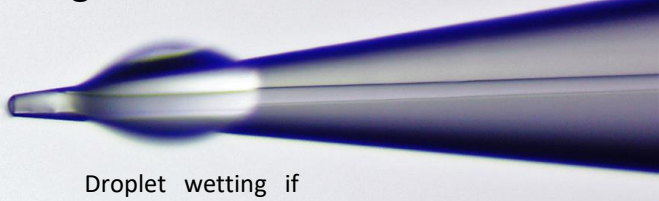



### LOTUS:



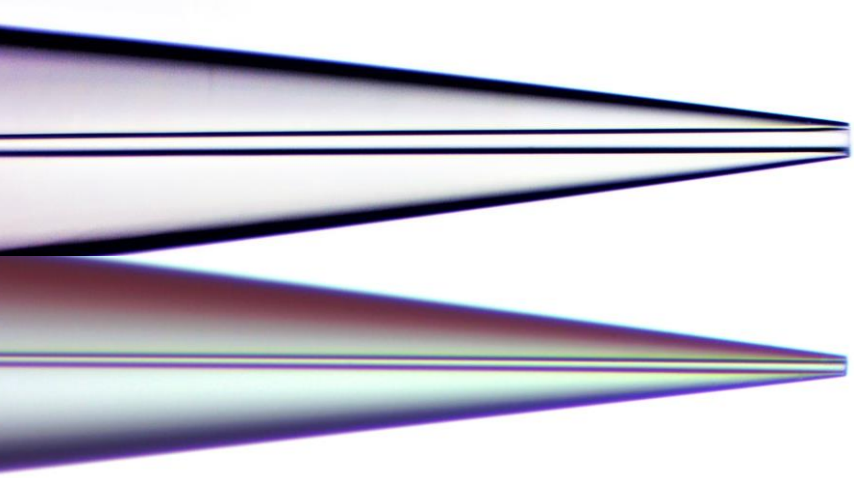
perfectly positioned droplet even with no voltage

### Regular:



Droplet wetting if no voltage applied.

The Sharp Singularity™
nESI Emitters



# The Sharp Singularity™ Emitters

## Improve the quality of your data

**with robust and repeatable nano-electrospray ionization**

Stable and repeatable signals require extremely tight tolerances at the microscopic scale.

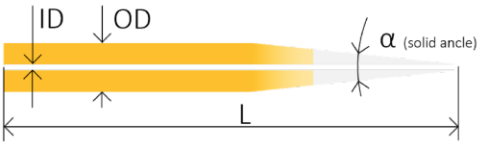
FIT's unique micro-machining process produces:

- **Extremely sharp emitters**
- **Constant inner diameter (down to 10µm ID)**
- **Very tight tolerances**

### Quality and traceability

We have full control of the production, QA/QC, and delivery process. All nano-ESI emitters are inspected and tested. To give you full control of your process, each emitter comes with a complete traceability and quality control report. With microscopy photos

## Available geometries




**Available emitter geometries:**

| | | | | |
|---|---|---|---|---|
| **Ref. 20-20** | ID=20µm, | OD=365µm, | L=20cm, | α= 7.5º |
| **Ref. 20-10.5** | ID=20µm, | OD=365µm, | L=10.5cm, | α= 7.5º |
| **Ref. 20-07** | ID=20µm, | OD=365µm, | L=7cm, | α= 7.5º |
| **Ref. 20-06.25** | ID=20µm, | OD=365µm, | L=6.25cm, | α= 7.5º |
| **Ref. 20-05** | ID=20µm, | OD=365µm, | L=5cm, | α= 7.5º |
| **Ref. 20-02** | ID=20µm, | OD=365µm, | L=2cm, | α= 7.5º |
| **Ref. 10-20** | ID=10µm, | OD=365µm, | L=20cm, | α= 7.5º |
| **Ref. 10-10.5** | ID=10µm, | OD=365µm, | L=10.5cm, | α= 7.5º |
| **Ref. 10-07** | ID=10µm, | OD=365µm, | L=7cm, | α= 7.5º |
| **Ref. 10-06.25** | ID=10µm, | OD=365µm, | L=6.25cm, | α= 7.5º |
| **Ref. 10-05** | ID=10µm, | OD=365µm, | L=5cm, | α= 7.5º |
| **Ref. 10-02** | ID=10µm, | OD=365µm, | L=2cm, | α= 7.5º |

**Other geometries upon request:**
**Available IDs:** 100um, 75um, 50µm, 40µm, 30um, 20µm, 15um, 10µm
**Available lengths:** from 2cm to 50 cm

**Ion source /column– emitter compatibility table:**

| Ion Source model | Emitter recommended by Ion Source provider | Our references |
|---|---|---|
| Nanospray Flex™ - **Thermo/Proxeon** | ≤ 20µm ID, 360µm OD, 10.5 cm long [1] | **Ref. 20-10.5** **Ref. 10-10.5** |
| NanoFlow Spray™, NanoFlow Z-Spray™, Micromass NanoFlow™, NanoLock Spray™, **- Waters** | 20µm ID, 360µm OD, 2.5'' or 6.25 cm long [2] | **Ref. 20-06.25** **Ref. 10-06.25** |
| CaptiveSpray™ - **Bruker** | 20µm ID, 360µm OD, 2 cm long [3] | **Ref. 20-02** **Ref. 10-02** |
| NanoSpray® III Ion Source - **SCIEX** | 10-20µm ID, 360µm OD, 7 cm long [4] | **Ref. 20-07** **Ref. 20-07** |
| SUPER SESI™ - **FIT** | 20µm ID, 360µm OD, 20 cm long | **Ref. 20-20** |
| Flex Ion connect for µPAC columns - **Pharmafluidics** | 20µm ID, 360µm OD, 5 cm long | **Ref. 20-05** **Ref. 10-05** |


1. Nanospray Flex Series Ion Source. User Guide - 60053-97127/ Revision B - Thermo Fisher Scientific.
2. Universal NanoFlow Sprayer. Installation and Maintenance Guide - 71500110107/ Revision C - Waters Corporation.
3. The impact II, a very high-resolution Quadrupole time-of-flight instrument (QTOF) for deep shotgun proteomics. Mol Cell Proteomics. Beck S. et al. 2015;14(7):2014–2029. doi: 10.1074/mcp.M114.047407.
4. NanoSpray® III Ion Source Consumables - D5037833 A - AB SCIEX.


Find pricing and more: https://www.fossiliontech.com/nanoesi-emitters

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