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2019

Scaling Laws for Transition from Varicose to Whipping Instabilities in Electrohydrodynamic Jetting.

2018

Breakup length of electrified liquid jets: Scaling laws and applications.

2014

Microfabricated electrospray emitter arrays with integrated extractor and accelerator electrodes for the propulsion of small spacecraft.

Dispersion of nano-Au suspension using novel pulsed jet nanoelectrospraying approach.

The flow rate sensitivity to voltage across four electrospray modes.

Electrospray pulsation: A diagnostic to understand cone-jet stability and minimum flow.

2012

The influence of geometry on the flow rate sensitivity to applied voltage within cone-jet mode electrospray.

Characterization of multi-jet electrospray systems.

Direct fabrication and morphology of metallic micropatterns by pulsed jet nanoelectrospraying of silver nano-ink.

2011

Nozzle size effects on the nanoelectrospraying of Au nanocolloid in a fully voltage-controlled form.

Electrospray deposited fibronectin retains the ability to promote cell adhesion.
2010

Voltage effects on the nanoelectrospray characteristics in fully voltage-controlled atomisation of gold nanocolloids.

A full voltage-controlled nanoelectrospray system and its steady characteristic analysed by empirically equivalent circuit method.

Direct fabrication of electrically functional microstructures by fully voltage-controlled electrohydrodynamic jet printing of silver nano-ink.

Deposition of colloidal gold nanoparticles by fully pulsed-voltage- controlled electrohydrodynamic atomisation.

Novel electrohydrodynamic jet-printing of organic silver ink in unforced form.
Wang K, Paine MD and Stark JPW. Optoelectronics and Advanced Materials, Rapid Communications vol. 4, (3) 365-368.

2009

Freeform fabrication of metallic patterns by unforced electrohydrodynamic jet printing of organic silver ink.

Effect of emitter geometry on flow rate sensitivity to voltage in cone jet mode electrospray.

Fully voltage-controlled electrohydrodynamic jet printing of conductive silver tracks with a sub- 100 ?m linewidth.

Tailoring the hydraulic impedance of out-of-plane micromachined electrospray sources with integrated electrodes.

2008

Inexpensive optically isolated nanoammeter for use with micro-Newton electric propulsion technology.

2007

Voltage-modulated flow rate for precise thrust control in colloid electrospray propulsion.

High-aspect-ratio silica nozzle fabrication for nano-emitter electrospray applications.

A high accuracy technique to measure the electrical conductivity of liquids using small test samples.


Nozzle and liquid effects on the spray modes in nanoelectrospray.
Paine MD, Alexander MS and Stark JPW. Journal of Colloid and Interface Science vol. 305, (1) 111-123.
2006

Evaluation of band structure and concentration of ionic liquid BMImBF(4) in molecular mixtures by using second derivatives of FTIR spectra.
Wu JP, Wang MJ and Stark JPW. *J Quant Spectrosc Ra* vol. 102, (2) 228-235.

The role of molar conductivity in electrospray cone-jet mode current scaling.
Smith KL, Alexander MS and Stark JPW. *Journal of Applied Physics* vol. 100, (1).

Electrospray performance of microfabricated colloid thruster arrays.

Pulsation modes and the effect of applied voltage on current and flow rate in nanoelectrospray.
Alexander MS, Paine MD and Stark JPW. *Analytical Chemistry* vol. 78, (8) 2658-2664.

Voltage effects on the volumetric flow rate in cone-jet mode electrospraying.

Measurement of low frequency relative permittivity of room temperature molten salts by triangular waveform voltage.

The sensitivity of volumetric flow rate to applied voltage in cone-jet mode electrospray and the influence of solution properties and emitter geometry.
Smith KL, Alexander MS and Stark JPW. *Physics of Fluids* vol. 18, (9).

2005

Identification and characterization of deposited fibronectin on biocompatible materials: Comparison of electrospray and wetting methods.

Fabrication and operation of microfabricated emitters as components for a colloid thruster.

A low-cost approach for measuring electrical conductivity and relative permittivity of liquids by triangular waveform voltage at low frequencies.

2004

Controlled electrospray for tissue engineering applications.

Spray current dependence on flow rate and conductivity in cone-jet mode vacuum spraying.
Smith KL and Stark JPW. *Institute of Physics Conference Series* vol. 178, 161-166.

2003

Spacecraft Systems Engineering. 3rd Edition.
STARK JPW, Swinerd GS and Fortsecue P. *Wiley International*.

2002

The direct simulation Monte Carlo of flows composed of asymmetric potential scatterers.
Alves N and Stark J. *Phys Fluids* vol. 14, (4) 1403-1413.

Simulation of a Couette flow in a fluid composed of asymmetric potential scatters.
Investigation of hypervelocity impacts on retrieved surfaces by DSMC.

2001

Direct simulation of meteoroids and space debris flux on LDEF spacecraft surfaces.
Miao JQ and Stark JPW. Planet Space Sci vol. 49, (9) 927-935.

Direct simulation of apex enhancement on the flux onto European retrievable carrier.
Miao JQ and Stark JPW. J Spacecraft Rockets vol. 38, (4) 594-600.

Evolution of debris clouds to microscopically chaotic motion.

1999

Direct simulation of space debris evolution.
Wang LQ and Stark JPW. J Spacecraft Rockets vol. 36, (1) 114-123.

1997

DSMC space debris simulation and comparison with LDEF impact experiments.
Wang LQ and Stark JPW. European Space Agency, (Special Publication) Esa Sp (393) 333-338.

Direct Monte-Carlo simulation of collision frequency of orbital debris.