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(54) Title (EN): ATOMIC-TO-NANOSCALE MATTER EMISSION/FLOW REGULATION DEVICES AND METHODS

(54) Title (FR): DISPOSITIFS ET PROCÉDÉS DE RÉGULATION DE FLUX/ÉMISSION DE MATIÈRE À L'ÉCHELLE ATOMIQUE À NANOMÉTRIQUE

(57) Abstract:
(EN): Atomic-to-Nanoscale Matter Emission/Flow Regulation Devices, Systems and methods are set forth. An exemplary device can include a through-hole that has a top, and a nozzle configured to facilitate atomic-to-nanoscale matter emission/flow regulation formed in an etchable nozzle substrate. The nozzle can be configured at the smallest cross-section of the through-hole. A bottom can be formed in the nozzle substrate or selectively connected to the nozzle. Systems can include matter transportation / flow regulation columns, printing systems, etching systems and the like through which self-aligned nanodroplets or single-to-finite numbered ionic species / gas phase matter can flow under spontaneous or external excitation conditions (such as voltages) at atmospheric as well as regulated pressures.

(FR): L'invention concerne des dispositifs, des systèmes et des procédés de régulation de flux/émission de matière à l'échelle atomique à nanométrique. Un dispositif donné à titre d'exemple peut comprendre un trou traversant qui a une partie supérieure et une buse conçue pour faciliter une régulation de flux/émission de matière à l'échelle atomique à nanométrique formée dans un substrat de buse pouvant être gravé. La buse peut être conçue au niveau de la plus petite section transversale du trou traversant. Un fond peut être formé dans le substrat de buse ou relié sélectivement à la buse. Les systèmes peuvent comprendre des colonnes de régulation de flux/transport de matière, des systèmes d'impression, des systèmes de gravure et analogues à travers lesquels des nanogouttelettes auto-alignées ou une matière de phase gazeuse/d'espèce ionique numérotée à un nombre unique à fini peuvent circuler dans des conditions d'excitation spontanée ou externe (telles que des tensions) à la pression atmosphérique ainsi qu'à des pressions régulées.

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