

## Gas field ion source from an Ir/W<111> single-atom tip

Hong-Shi Kuo<sup>1\*</sup>, Ing-Shouh Hwang<sup>1</sup>, Tsu-Yi Fu<sup>2</sup>, Yi-Hsien Lu<sup>1</sup>, Chun-Yueh Lin<sup>1</sup>,  
and Tien T. Tsong<sup>1</sup>

<sup>1</sup>Institute of Physics, Academia Sinica, Nankang, Taipei, Taiwan, R.O.C.

<sup>2</sup>*Department of Physics, National Taiwan Normal University, Taipei, Taiwan, R.O.C.*

### Abstract

We show that a thermally stable Ir/W<111> single-atom tip (SAT) is a very good point ion source for rare gases (He, Ar) and reactive gases (H<sub>2</sub>, O<sub>2</sub>). The ion beams are emitted from the topmost atom with a very small opening angle (< 1°) and, most importantly, they exhibit high brightness. In addition, the ion currents are very stable. These good properties together with the long lifetime of the tip and the reliable tip preparation method make this tip especially suitable for applications in gas field ion source focused ion beam systems.

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\* Hong-Shi Kuo, e-mail: [khs@phys.sinica.edu.tw](mailto:khs@phys.sinica.edu.tw); Tel: +886-2-2789-6737; Fax: +886-2-2783-4187