

## Atom bottom-up manipulation controlled by light for microbattery use

### Abstract

In this paper, we propose a new design of the atom bottom-up technique that uses an optical trapping tool to form the atom trapping layer within a thin- $\mu\text{m}$  grating. By using a PANDA ring resonator, where atoms can be trapped, pumped, and controlled by light, the trapped atoms/molecules can be selected, filtered, and embedded within the required thin- $\mu\text{m}$  grating layers to manufacture nanobattery. In application, P-type or N-type atom can be prepared, trapped, and embedded within the desired thin- $\mu\text{m}$  layers, and finally, the microbattery can be manipulated. The theoretical background of light pulse in a PANDA ring resonator is also reviewed.