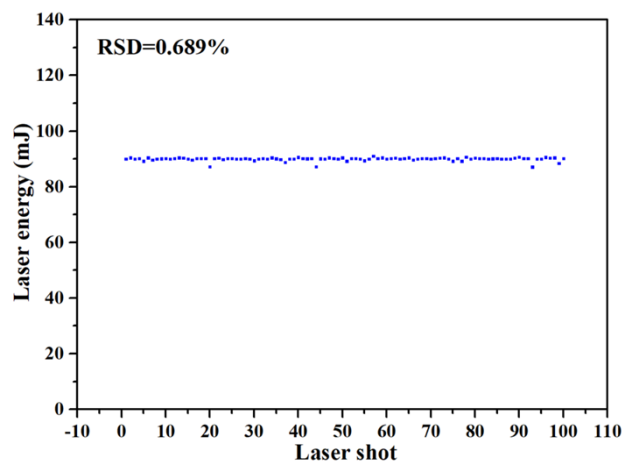


## Supplementary information

### Fast determination of electrolyte elements in human blood plasma using surface-enhanced laser-induced breakdown spectroscopy combined with gel film method

Yuanhang Wang,<sup>a,b</sup> Yang Bu,<sup>\*a,b</sup> Biao Yang<sup>a,b</sup> and Yachao Cai<sup>c</sup>

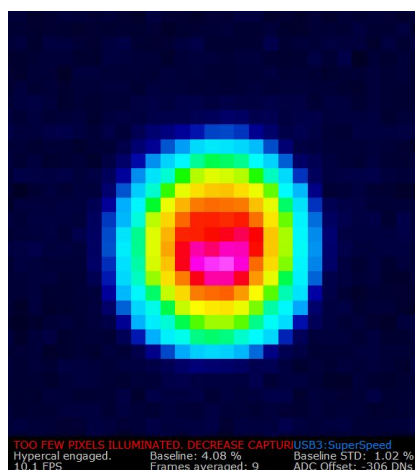
#### I. Measurement of laser energy stability



**Fig. S1** The laser energy of one hundred laser shots.

The laser energy was measured by a laser energy sensor (J-50MB-YAG, Coherent) coupled with a laser energy meter (FieldMaxII-TOP, Coherent). The relative standard deviation (RSD) of 100 laser shots was 0.689%.

#### II. Measurement of laser spot size



**Fig. S2** The measured laser spot.

The laser spot was analyzed by a beam profiler (WinCamD-LCM, DataRay), and the laser spot was 100  $\mu\text{m}$  in diameter.

### III. Elemental composition of the metal substrates

Table S1 Elemental composition of the metal substrates

Metal substrate	Main element	Other elements
Ti substrate	Ti > 99.6%	Al、Si、Fe、C、N、H、O
Al substrate	Al > 99.9%	Si、Fe、Cu、Mg、Zn、Mn、Ti、V
Zn substrate	Zn > 99.99%	Sn、Cu、Cd、Pb、Fe

### IV. Blank control spectra of Na and K on a clean Zn substrate

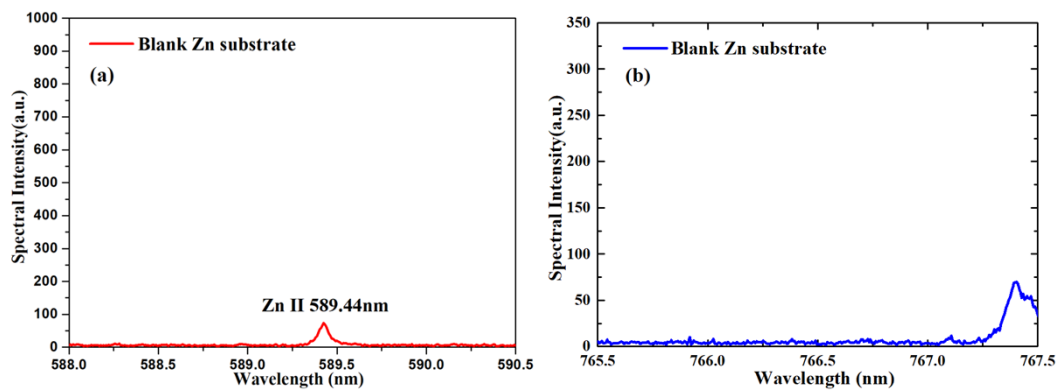


Fig. S3 Blank control spectra of (a) Na and (b) K on a clean Zn substrate, with the background spectra removed.