

An economical fluorescence detector for lab-on-a-chip devices with a light emitting photodiode and a low-cost avalanche photodiode

Jing Wu, Xianhu Liu, Lili Wang, Lijun Dong, Qiaosheng Pu*

Key Laboratory of Nonferrous Metals Chemistry and Resources Utilization, Gansu Province, State Key Laboratory of Applied Organic Chemistry, Department of Chemistry, Lanzhou University, Lanzhou, Gansu, 730000, China

* Corresponding author

Add: Department of Chemistry, Lanzhou University, 222 Southern Tianshui Road, Lanzhou 730000, China. Tel: 86-931-8913813; Fax: +86-931-8912582.

Email: puqs@lzu.edu.cn ((Q.S. Pu))

1

Table S1 Information of the components of the LED induced fluorescence detector

Component	Price (U.K. £)	Model	Manufacturer or seller
LED with its driving module	3	blue, 3W	web seller: Taobao *
APD	51.3(58.8Euro)	AD500-8-TO52S2	Silicon Sensor, Germany
CCTV lens	2	16 mm	Electronics market, Lanzhou, China
Magnifier	1	20 × 21 mm	Local market
band-pass filter	34	420-490 nm	Shenyang HB optical technology Co., Ltd., Shenyang, China
dichroic mirror	14	505 nm	
long-pass filter	19	520 nm	
USB DAQ [†]	607	USB-6211	National Instrument, Austin, TX, USA
LabView software [‡]	592	Version 8.6	

2

*Equivalent at eBay:

3

http://cgi.ebay.com/5x-Blue-3W-LED-Lamp-Prolight-Star-90Lm-High-Power-A-/220766318726?pt=LH_DefaultDomain_0&hash=item3366b2

4 b086

5 [†] It's possible to use cheaper DAQ card, like USB-6009 (price £147) from National Instrument or equivalents from other vendors. Here we use

6 USB-6211 to perform soft-based lock-in amplification. Prices are converted from RMB according to the exchange rate on 2011.10.26.

7 [‡] LabView has the ability to build stand alone executable programs, so the users of the detector need only the program, LabView software is

8 optional. Price is converted from RMB according to the exchange rate on 2011.10.26.