Supplementary information for
Quantitative and sensitive detection of lipase using liquid crystal microfiber biosensor based on whispering-gallery mode

Rui Duan,ab Yanzeng Li, Yichen Hea, Yonggui Yuan*ab, and Hanyang Li*ab

a College of Physics and Optoelectronic Engineering, Harbin Engineering University, Harbin 150001, China

b Key Lab of In-fiber Integrated Optics, Ministry Education of China, Harbin Engineering University, Harbin 150001, China

c James Franck Institute, University of Chicago, 929 East 57th Street, Chicago, Illinois 60637, United States.

*Email address: yuanyonggui@aliyun.com; hanyang_li@qq.com

Contents

1. Figure S1. Schematic diagram of WGMs in cylindrical LC resonator .................S-2

2. Figure S2. The relationship of lipase concentrations to the WGM wavelength shift .................................. S-2

3. Table S1. The relationship between lipase concentration and WGM spectral shift .................................. S-3
Fig. S1 Schematic diagram of WGMs in cylindrical LC resonator

Fig. S2 The relationship of lipase concentrations to the WGM wavelength shift

\[
y = 0.421x + 2.068 \\
R^2 = 0.986
\]
Table S1. The relationship between lipase concentration and WGM spectral shift

<table>
<thead>
<tr>
<th>Concentration of lipase</th>
<th>10μg/mL</th>
<th>1μg/mL</th>
<th>0.1μg/mL</th>
<th>0.01μg/mL</th>
<th>0.001μg/mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average wavelength shift</td>
<td>2.44 nm</td>
<td>2.16 nm</td>
<td>1.61 nm</td>
<td>1.22 nm</td>
<td>0 nm</td>
</tr>
<tr>
<td>Response time</td>
<td>~80 s</td>
<td>~110 s</td>
<td>~180 s</td>
<td>~200 s</td>
<td>—</td>
</tr>
</tbody>
</table>