

Supplementary Information for High-speed scanless entire bandwidth mid-infrared chemical imaging

Yue Zhao ^{1,5,*}, Shota Kusama ¹, Yuji Furutani ^{2,3}, Wei-Hong Huang ⁴, Chih-Wei Luo ⁴, Takao Fuji ^{1,†}

¹ Laser Science Laboratory, Toyota Technological Institute, 2-12-1 Hisakata, Tempaku-ku, Nagoya 468-8511, Japan.

² Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Showa-Ku, Nagoya 466-8555, Japan.

³ Optobiotechnology Research Center, Nagoya Institute of Technology, Showa-Ku, Nagoya 466-8555, Japan.

⁴ Department of Electrophysics, National Yang Ming Chiao Tung University, Hsinchu 30010, Taiwan.

⁵ Current address: Graduate School of Engineering College of Design and Manufacturing Technology, Muroran Institute of Technology, 27-1 Mizumoto-cho, Muroran, Hokkaido 050-8585, Japan.

* e-mail: zhaoyue@muroran-it.ac.jp

† e-mail: fuji@toyota-ti.ac.jp

S1. Hyperspectral images by skipping pixel rows.

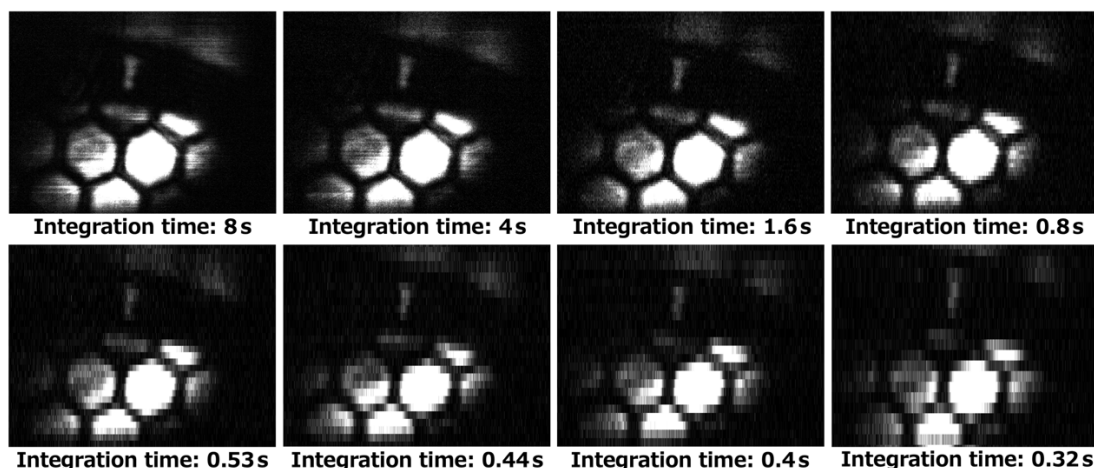


Fig. S1. Hyperspectral images by skipping pixel rows. The upper left image (640×480 pixels) was taken without any pixel row skips and the integration time was 8 s. Subsequent images were taken by skipping pixel rows, which are skipping 2 (integration time: 4 s), 5 (integration time: 1.6 s), 10 (integration time: 0.8 s), 15 (integration time: 0.53 s), 18 (integration time: 0.44 s), 20 (integration time: 0.4 s), and 25 (integration time: 0.32 s) pixel rows, respectively.

S2. GaSe scotch tape film.

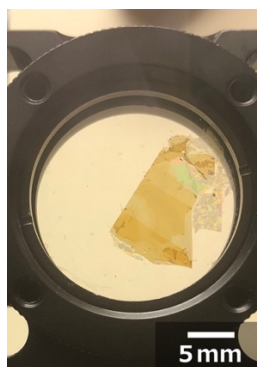


Fig. S2. GaSe scotch tape film.

S3. The computer-aided design (CAD) of the microfluidic device.

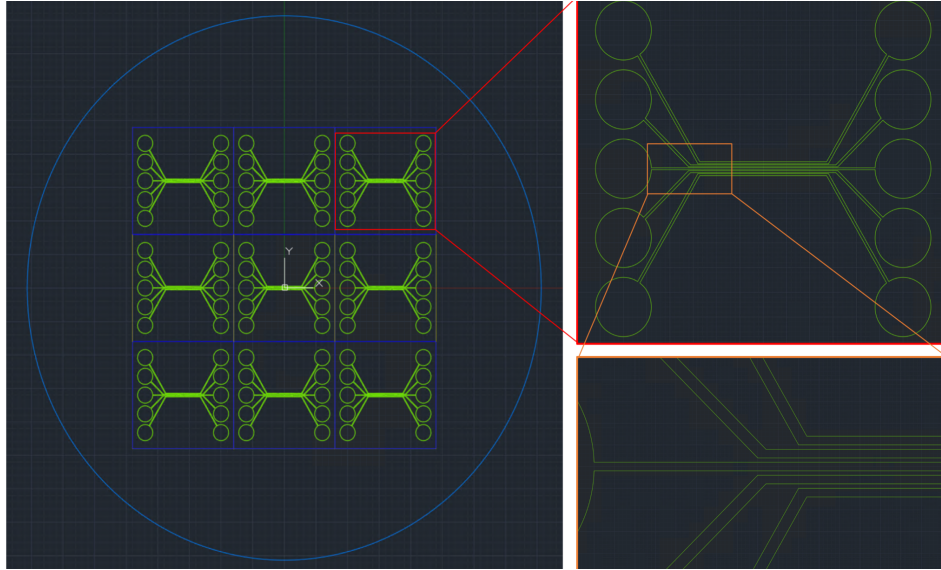


Fig. S3. The computer-aided design (CAD) of the microfluidic device. The depth of the microchannel was designed to be 25 μm .

S4. The photograph of the microfluidic device.

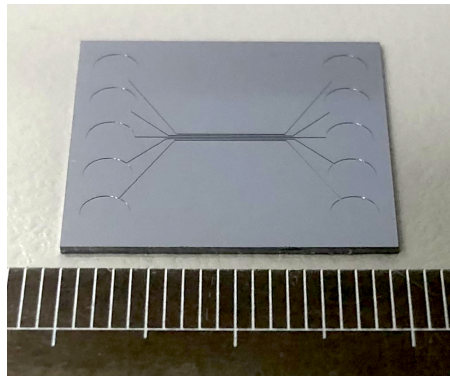


Fig. S4. The photograph of the microfluidic device. Each tick of the scale bar in the photo is 1 mm. The microchannel utilizes the capillary phenomenon that after the liquid is dropped into the circular groove, it will be sucked into the microchannel under the action of surface tension.