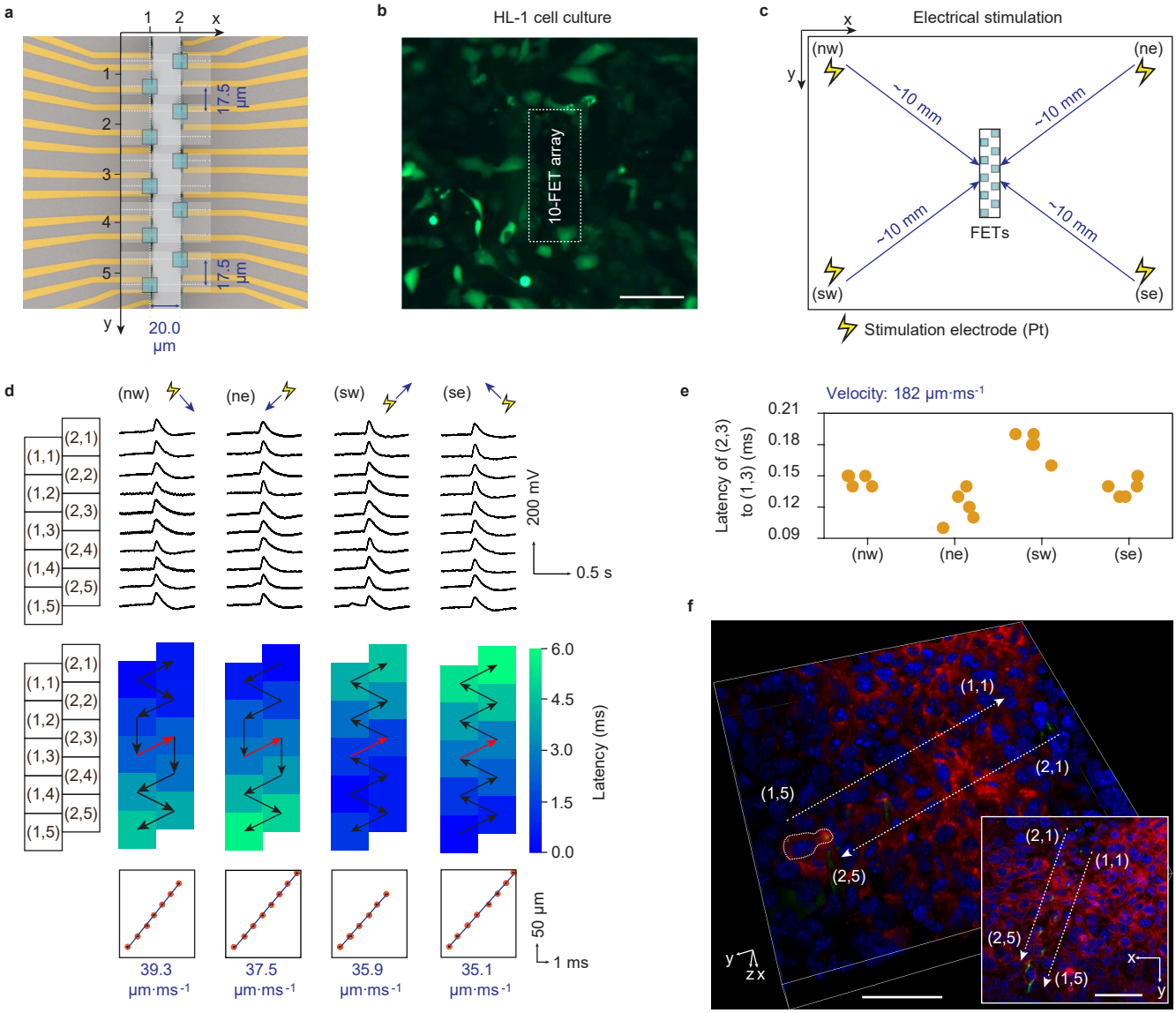
a
1
2
x
1
2
3
4
5
y
17.5 µm
17.5 µm
20.0 µm
b
HL-1 cell culture
10-FET array
c
Electrical stimulation
x
y
(nw)
(ne)
(sw)
(se)
~10 mm
~10 mm
~10 mm
~10 mm
FETs
Stimulation electrode (Pt)
d
(nw)
(ne)
(sw)
(se)
(1,1)
(1,2)
(1,3)
(1,4)
(1,5)
(2,1)
(2,2)
(2,3)
(2,4)
(2,5)
200 mV
0.5 s
6.0
4.5
3.0
1.5
0.0
Latency (ms)
50 µm
1 ms
39.3 µm·ms-1
37.5 µm·ms-1
35.9 µm·ms-1
35.1 µm·ms-1
e
Velocity: 182 µm·ms-1
Latency of (2,3) to (1,3) (ms)
0.21
0.18
0.15
0.12
0.09
(nw)
(ne)
(sw)
(se)
f
(1,1)
(2,1)
(1,5)
(2,5)
y
z x
x
y