

Materials List for:

Long-term Behavioral Tracking of Freely Swimming Weakly Electric Fish

James J. Jun^{1,2,3}, André Longtin^{1,2,3}, Leonard Maler^{2,3}

¹Department of Physics, University of Ottawa

²Department of Cellular and Molecular Medicine, University of Ottawa

³Centre for Neural Dynamics, University of Ottawa

Correspondence to: James J. Jun at jamesjun@gmail.com

URL: <https://www.jove.com/video/50962>

DOI: [doi:10.3791/50962](https://doi.org/10.3791/50962)

Materials

| Name | Company | Catalog Number | Comments |
|------------------------------------|---------------------------------|-------------------------------------|--|
| Aquarium Construction | | | |
| Electrically shielded floor heater | ThermoSoft Corp., IL, USA | ThermoTile | www.thermosoft.com |
| Tempered glass panel | generic | | 0.5 in thick, used for the aquarium construction |
| Aquarium grade silicone | generic | | |
| Acrylic sheet | generic | | 0.25 in thick, matte white |
| Natural rubber sheet | generic | | 0.25 in thick |
| Servomotor | HTECHRCD Inc., Korea | HS-325HB, 180deg rotation | www.servocity.com |
| Servomotor arm mount | HTECHRCD Inc., Korea | 56362 Large Spline | www.servocity.com |
| Servomotor controller (6 channels) | Sparkfun | ROB-09664 | Micro Maestro 6-channel USB Servo Controller |
| Active USB extension cable | C2G | 38990 | 12 m USB 2.0 A Male to A Female 4-Port Active Extension Cable |
| Exhaust fan | Nutone | ILFK120 | www.homedepot.com |
| Vertical aquarium filter | Tetra, Germany | Whisper Internal Power Filter - 40i | |
| Crushed coral | | | Used to increase the pH of the tank water |
| EOD Recording Setup | | | |
| Graphite Electrodes | Staedtler, Germany | Mars Carbon 2-mm type HB | Shave the outer coating |
| Physiological Amplifier/Filter | Intronix, Canada | 2015F | |
| Coaxial Cable | generic | RG174 | For electrodes assembly |
| Coaxial Cable | generic | RG54 | For wiring use |
| BNC jack connector for RG-174 | Amphenol Connex | 112160 | For electrodes assembly |
| BNC plug connector for RG-54 | Amphenol Connex | 112116 | For wiring use |
| Signal digitizer hardware | Cambridge Electronic Design, UK | Power MKII 1401 | |
| Signal digitizer software | Cambridge Electronic Design, UK | Spike 2. ver 7 | |
| Visual Tracking Setup | | | |
| White LED light | IKEA, Sweden | DIODER 201.194.18 | www.ikea.com |
| Infrared LED light (850 nm) | Scene Electronics, China | S8100-60-B/C-IR | Remove built-in fan |
| USB webcam | Logitech Inc., CA, USA | C910 | Remove Infrared blocking filter |
| Motorized camera | Logitech Inc., CA, USA | Quickcam Orbit | Remove Infrared blocking filter |
| Video recording software | Logitech Inc., CA, USA | Logitech Quickcam Software | Download from www.logitech.com |
| MATLAB | Mathworks, MA, USA | 2012a | Image processing toolbox |