Materials List for:
Fabrication and Characterization of a Conformal Skin-like Electronic System for Quantitative, Cutaneous Wound Management

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### Materials

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Catalog Number</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3” Silicon wafer</td>
<td>University Wafer, USA</td>
<td></td>
<td>Use as carrier to fabricate the device</td>
</tr>
<tr>
<td>Acetone</td>
<td>Fisher Scientific, USA</td>
<td>A18-1</td>
<td>Use to clean a wafer and to remove photoresist</td>
</tr>
<tr>
<td>Isopropanol (IPA)</td>
<td>Fisher Scientific, USA</td>
<td>A459-1</td>
<td>Use to clean a wafer</td>
</tr>
<tr>
<td>AZ4620 photoresist</td>
<td>AZ Electronic Materials, USA</td>
<td></td>
<td>Use to make patterns on metals and polymers</td>
</tr>
<tr>
<td>AZ400K developer</td>
<td>AZ Electronic Materials, USA</td>
<td></td>
<td>Use to develop AZ4620 photoresist</td>
</tr>
<tr>
<td>Chromium etchant</td>
<td>Transene, USA</td>
<td>1020AC</td>
<td>Use to etch Cr layer of device</td>
</tr>
<tr>
<td>Copper etchant</td>
<td>Transene, USA</td>
<td>ASP-100</td>
<td>Use to etch Cu layer of device</td>
</tr>
<tr>
<td>Sylgard 184 Silicone Elastomer Kit (PDMS)</td>
<td>Dow Coming, USA</td>
<td>39100000</td>
<td>Use as a substrate for 'dry' retrieval</td>
</tr>
<tr>
<td>PI2545 polyimide</td>
<td>HD MicroSystem, USA</td>
<td></td>
<td>Use to encapsulate metal layer</td>
</tr>
<tr>
<td>Solaris</td>
<td>Smooth-On, USA</td>
<td></td>
<td>Use as substrate and to encapsulate device</td>
</tr>
<tr>
<td>Petridish</td>
<td>Carolina, USA</td>
<td>741255</td>
<td>Use as mold to make substrate</td>
</tr>
<tr>
<td>Water-Soluble Wave Solder Tape 5414</td>
<td>3M, USA</td>
<td>AM000000217</td>
<td>Use to retrieve device from PDMS layer</td>
</tr>
<tr>
<td>High Activity Liquid Stainless Steel Flux</td>
<td>Worthington, USA</td>
<td>331929</td>
<td>Use to remove oxidation layer on Cu</td>
</tr>
<tr>
<td>Flexible, micro-film cable</td>
<td>Elform, USA</td>
<td></td>
<td>Use to make the electrical connection between the electronic device and the data acquisition system</td>
</tr>
<tr>
<td>pH Neutral Cleaner</td>
<td>Australian Gold, USA</td>
<td></td>
<td>Use as disinfectant solution to clean device in clinical testing</td>
</tr>
<tr>
<td>Solder</td>
<td>Kester, USA</td>
<td>24-6337-9703</td>
<td>Use as material to solder hard wires</td>
</tr>
<tr>
<td>Ultraviolet lamp</td>
<td>Cole-Parmer, USA</td>
<td>97600-00</td>
<td>Use to activate PDMS layer as hydrophilic surface</td>
</tr>
<tr>
<td>Multiplexer</td>
<td>FixYourBoard, USA</td>
<td>U802</td>
<td>Use to acquire measurements from six sensing components</td>
</tr>
<tr>
<td>DC/AC current source</td>
<td>Keithley, USA</td>
<td>6221</td>
<td>Use to supply current</td>
</tr>
<tr>
<td>SMD Digital Hot Air Rework Station</td>
<td>Aoyue, China</td>
<td>968A+</td>
<td>Use to solder hard wires, to electrically connect between the device and external instruments</td>
</tr>
<tr>
<td>Infrared camera</td>
<td>FLIR, USA</td>
<td>435-0001-01-00</td>
<td>Use to take infrared images in experiment</td>
</tr>
<tr>
<td>Equipment</td>
<td>Manufacturer, USA</td>
<td>Model</td>
<td>Use</td>
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<tr>
<td>Digital multimeter</td>
<td>Fluke, USA</td>
<td>117</td>
<td>Use to check electrical connection</td>
</tr>
<tr>
<td>Lock-in amplifier</td>
<td>Stanford Research System, USA</td>
<td>SR830</td>
<td>Use to perform four-point-probe-measurement</td>
</tr>
<tr>
<td>Electron beam evaporator</td>
<td>9 scale Vacuum Products, USA</td>
<td></td>
<td>Use to deposit thin films (Cu and SiO$_2$)</td>
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</tbody>
</table>