



Figure 3: (a) 3D view of the entire sensor array (15 x 5). The columns, left facing and right facing cantilevers, are individually addressed (A-E and A*-E*) and the unconnected terminals (top and bottom corners) are ground. The ground interconnects are not shown to simplify the image. (b) 3D close up view of the cantilevers, which are connected in series on each column. (c) Flip chip bonding of the amplifier die with the sensor die. Once the amplifier is patterned with solder, it is inverted and electrically and physically bonded with the sensor die.

Since signal integrity and noise immunity are crucial for the signal output from the cantilevers to be visible, the amplifier die will be directly bonded to the sensor die. This will be accomplished with flip chip bonding (Fig. 3c) or using through silicon vias (TSVs). Since the amplifier die will be very small (100s of μm per side), they may be bonded on the contact pad area with ground shielding around the outside for further noise immunity.

Page 8, S_{ij} equation: $S_{ij} = s_{ijkl} \sigma_{kl} + d_{kij} E_k$

Page 9, the second line from the bottom: "The ground interconnects are not shown to ~~not~~ simplify the image..."

Page 10. Fig 4. Caption: "... The patterning associated with steps 1-3 of the process described in the text ~~are is~~ not shown here..."

Page 19, last line: AMBI|IENT