

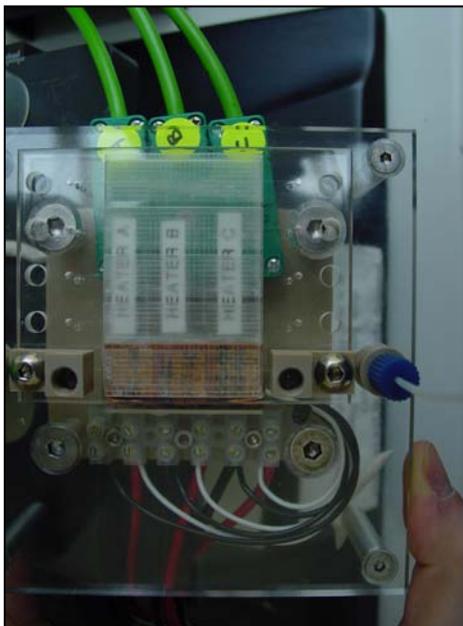
MEMS/MicroFluidics Seminar

Title: Microfabricated device for PCR by sample shunting

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Date: 2:00 PM Monday March 15, 2004

Venue: Building 225 Room A362 (SED Conference Room)



Microchip positioned over the heating system.

Despite tremendous impact in clinical diagnostics, conventional end-point and real-time quantitative (RQ) polymerase chain reaction (PCR) has near universal medical applications but suffers from intrinsic technical limitations. These restrictions include poor compatibility to study low transcript number amongst a high background of other nucleic acids, analysis of several targets from minute biopsy samples, plus additional constraints relating to time, expense and risk of cross-contamination. We are developing PCR microfluidic devices that will circumvent these drawbacks. Our novel approach is based on a sample-shunting system: the aqueous sample plug is shunted from one temperature zone to another by a pump system. This approach (see photo) will offer fast-cycling conditions, channel parallelization and a dimensionally favorable size and format that will ultimately derive uTAS devices for robust inter-laboratory standardization.

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