

Low-cost field-fabricated Instrumentation

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चिराम
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विज्ञान आश्रम







Milk – Small farmers

Milk collection center in village (all milk in village gets collected together)

Milk processing unit

- _ Milk get tested at processing unit
- _ If found sour, all farmers gets less payment.
- _ If farmer can detect the souring before it get 40% sour, milk can be saved.

Potable water :

To find out wheather water is suitable for drinking ?





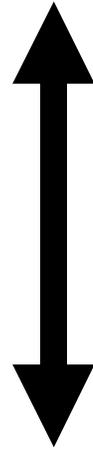
Data Logger for recording water level in Well

- _ Vigyan Ashram maintains records of water level in the well, everyday.
- _ We have records for last 24 years
- _ It helps us in predictating the time till water last in the well. It helps in water management.

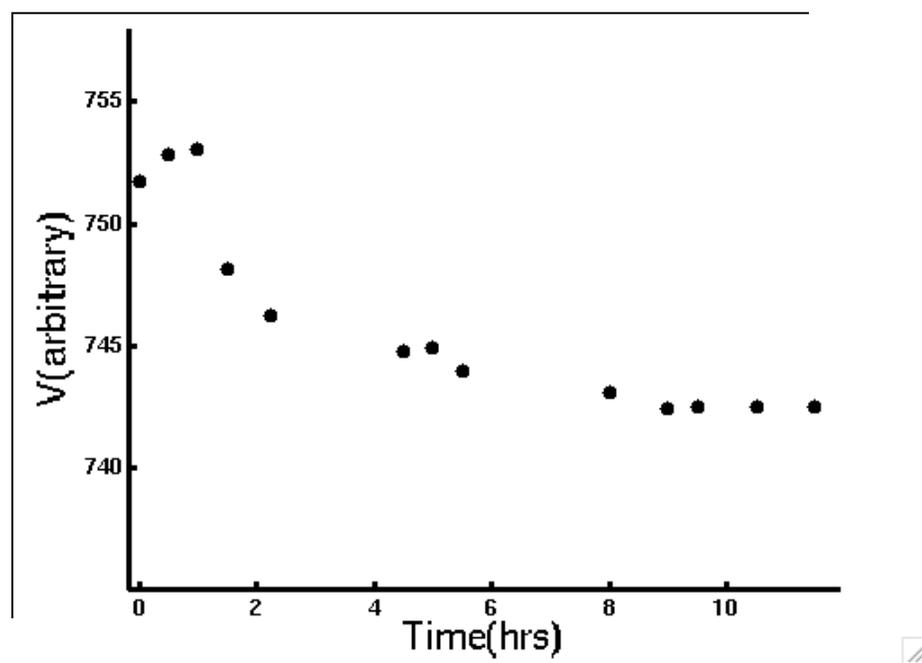
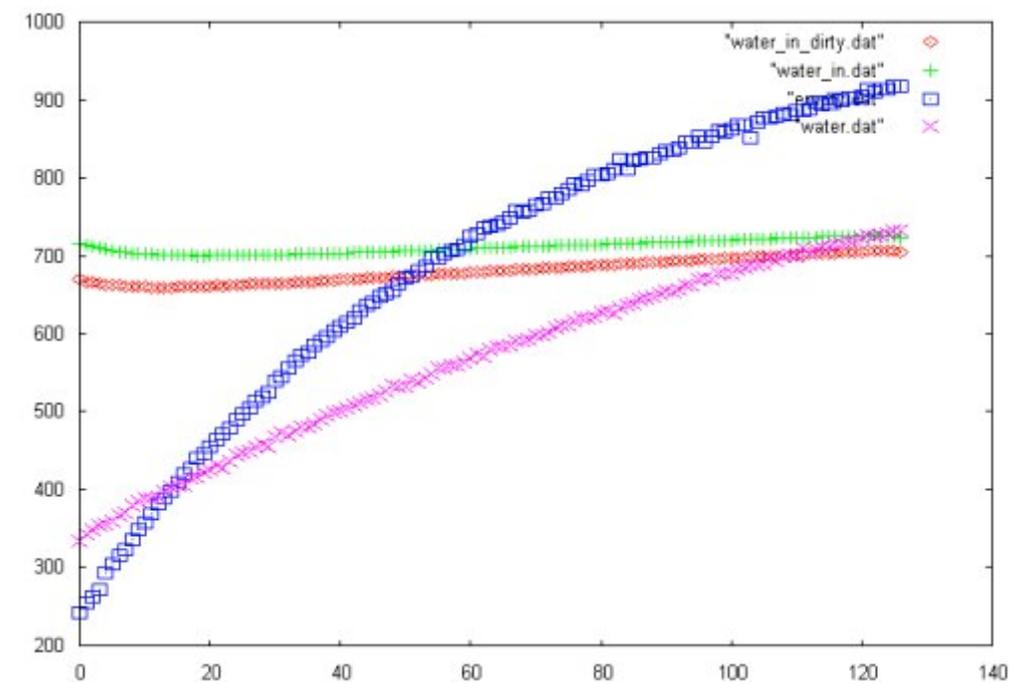
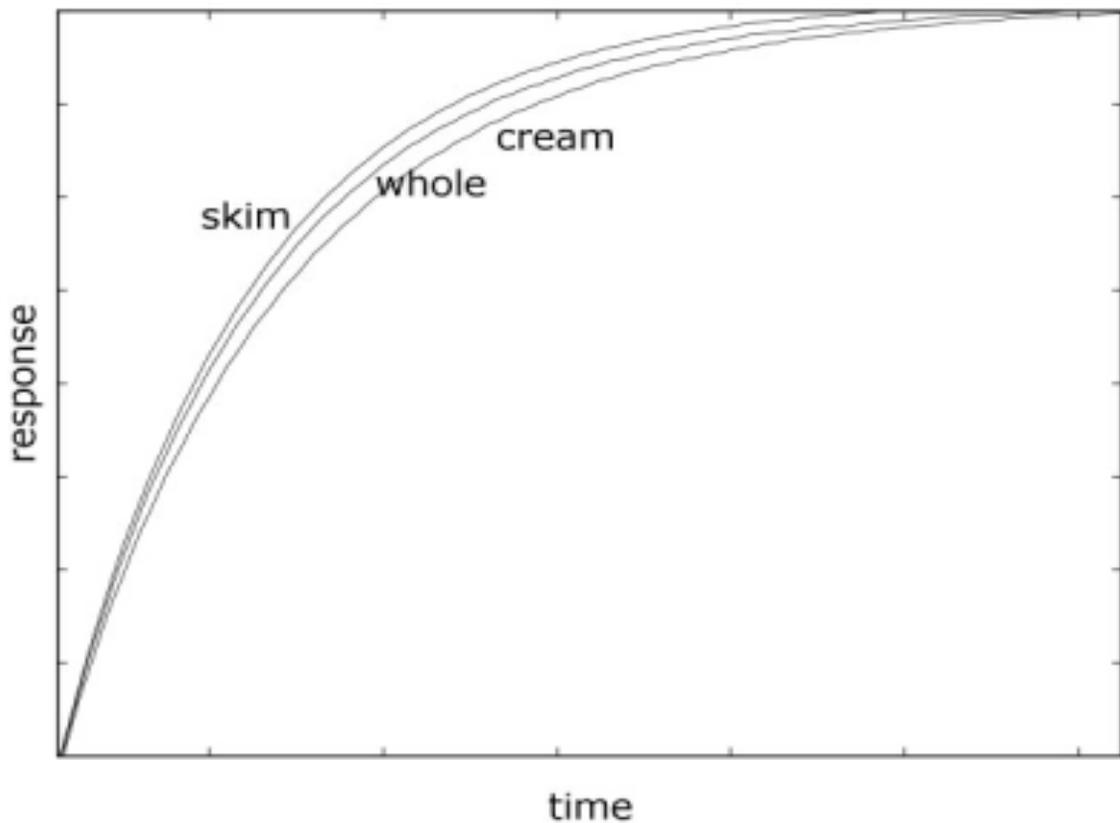
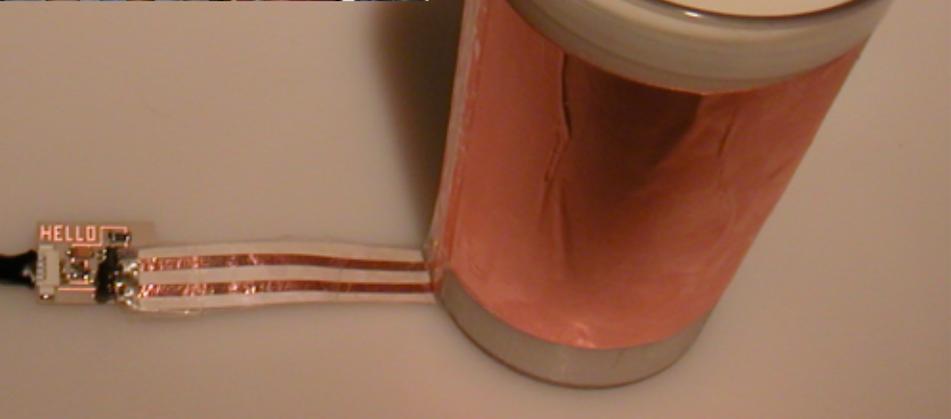
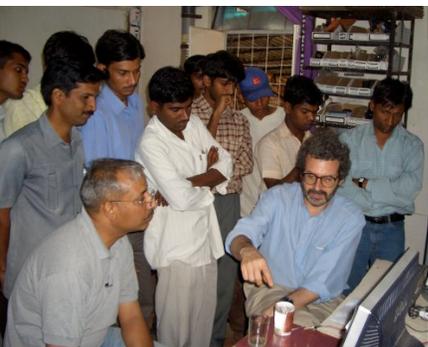


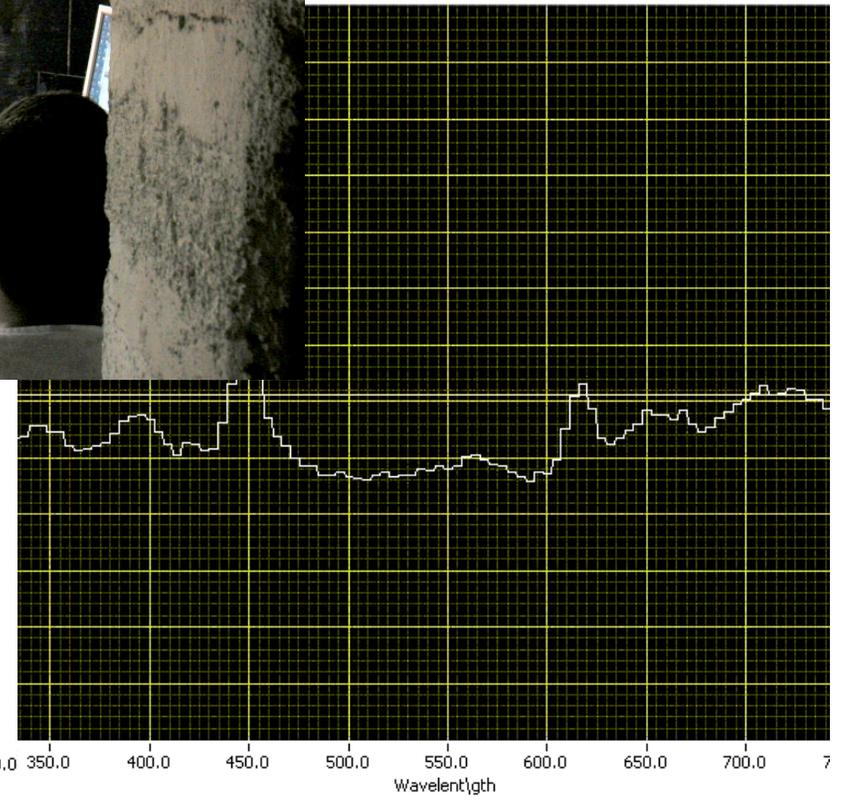
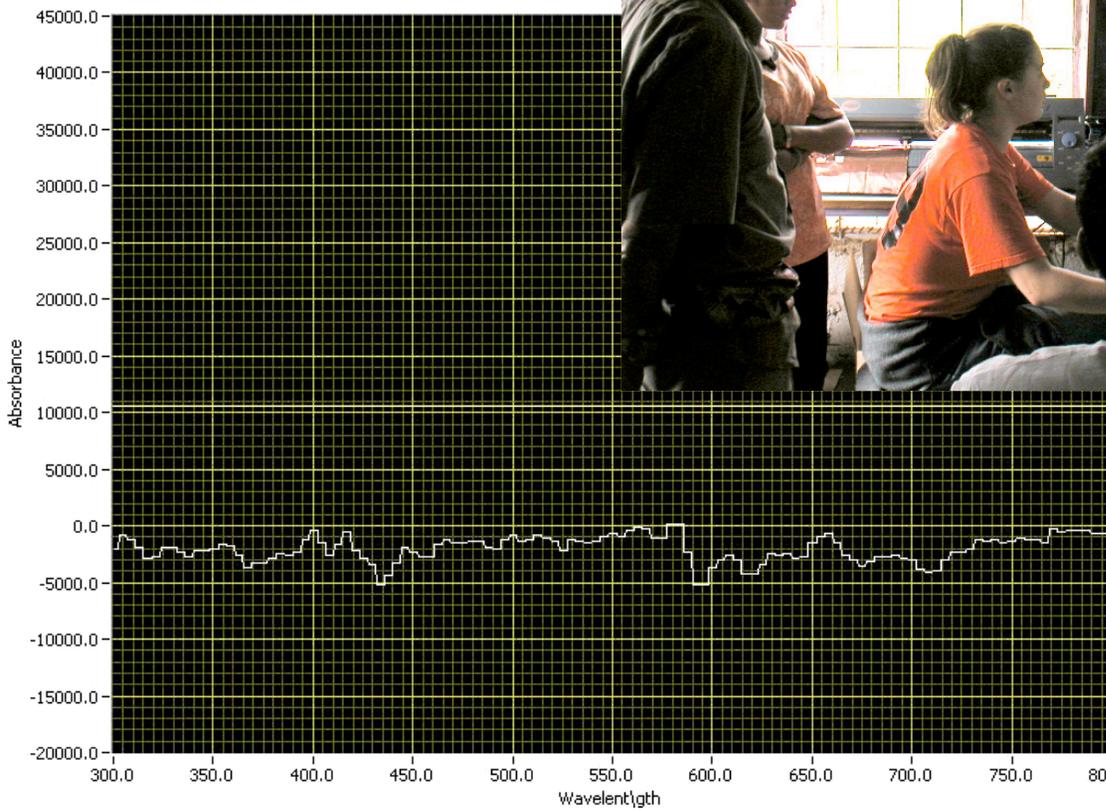
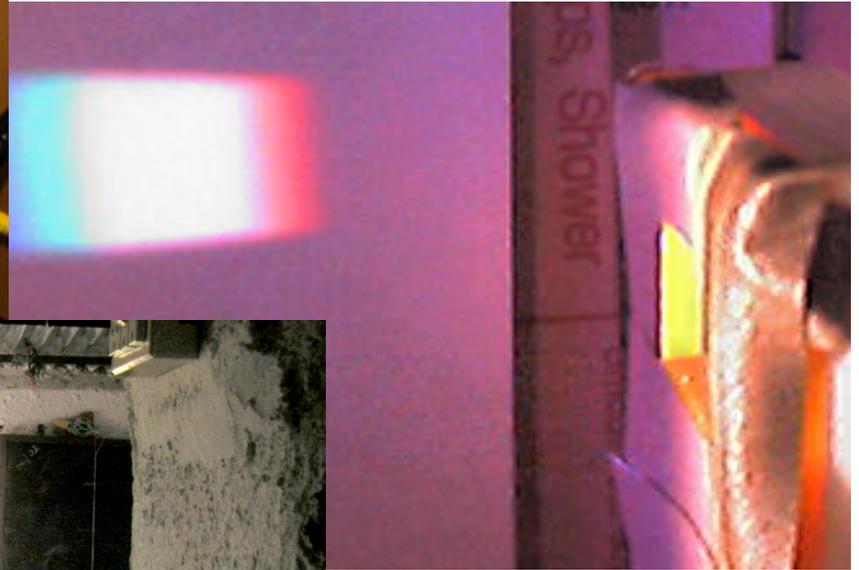
- _ A simple instrument which can record the water level in the wells in a village.
- _ Can predict the time till water last depending on the water consumption and past records.

Digital divide

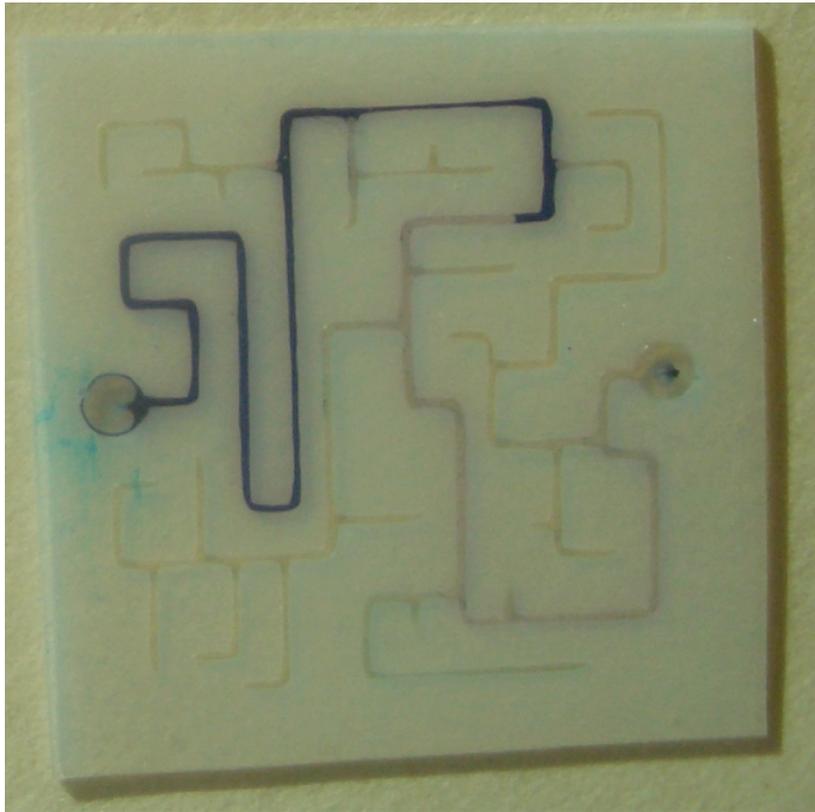


Instrumentation divide



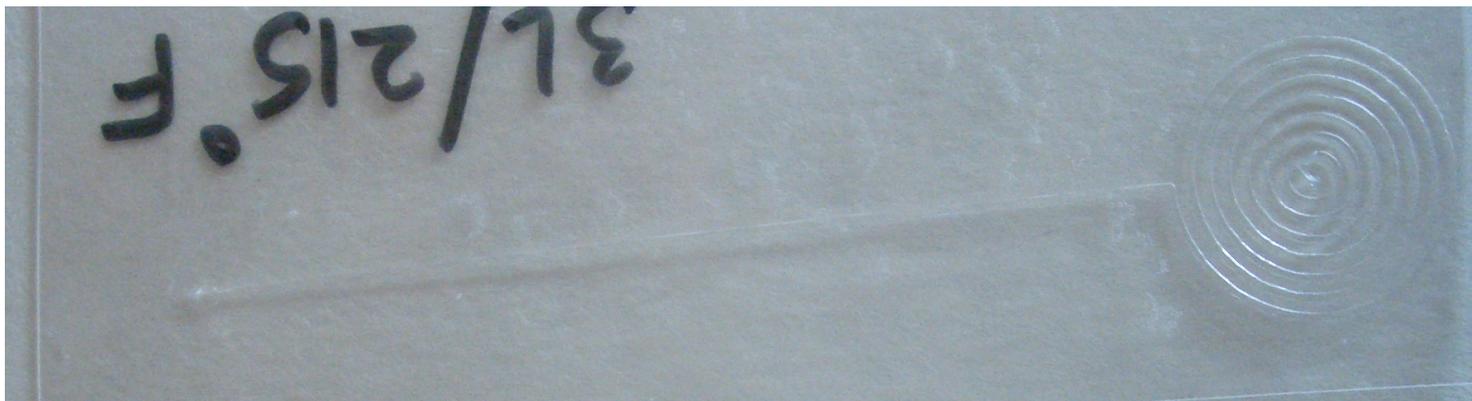


Microfluidic low-cost diagnostics



Multi-layer direct write process

- Flexible
 - Transparent
 - Disposable
 - Low-cost
-
- Passive separation eg. plasma separation from whole blood sample, milk components



Low-cost colorimetric anemia detector

Nearly 1/4 of world population is anemic

Microfluidic volume control
Capillary pump
On-chip reagents
Safe disposal

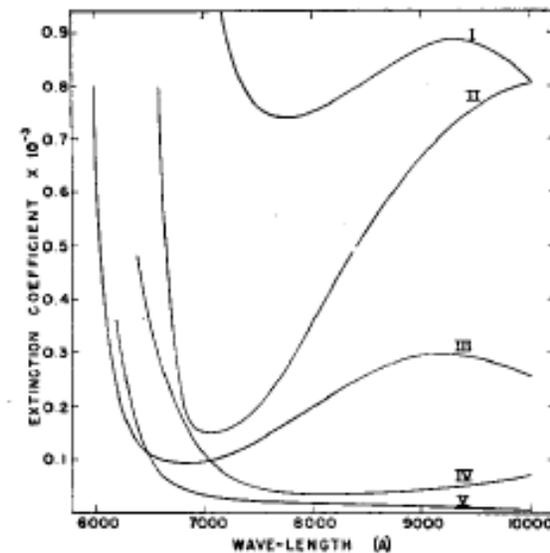
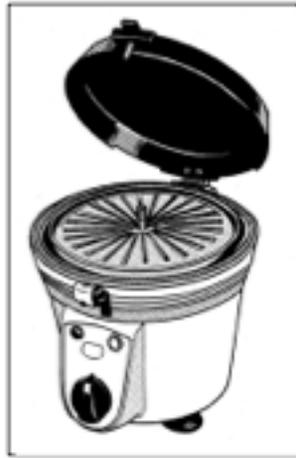
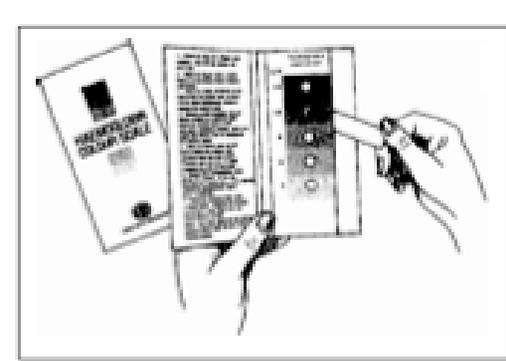


FIG. 1. Absorption spectra of hemoglobin derivatives in the near infra-red. Curve I represents acid hematin obtained by diluting blood in $N/10$ HCl; Curve II, methemoglobin at pH of 6.3 to 6.7; Curve III, oxyhemoglobin; Curve IV, cyanmethemoglobin; Curve V, carbonylhemoglobin.