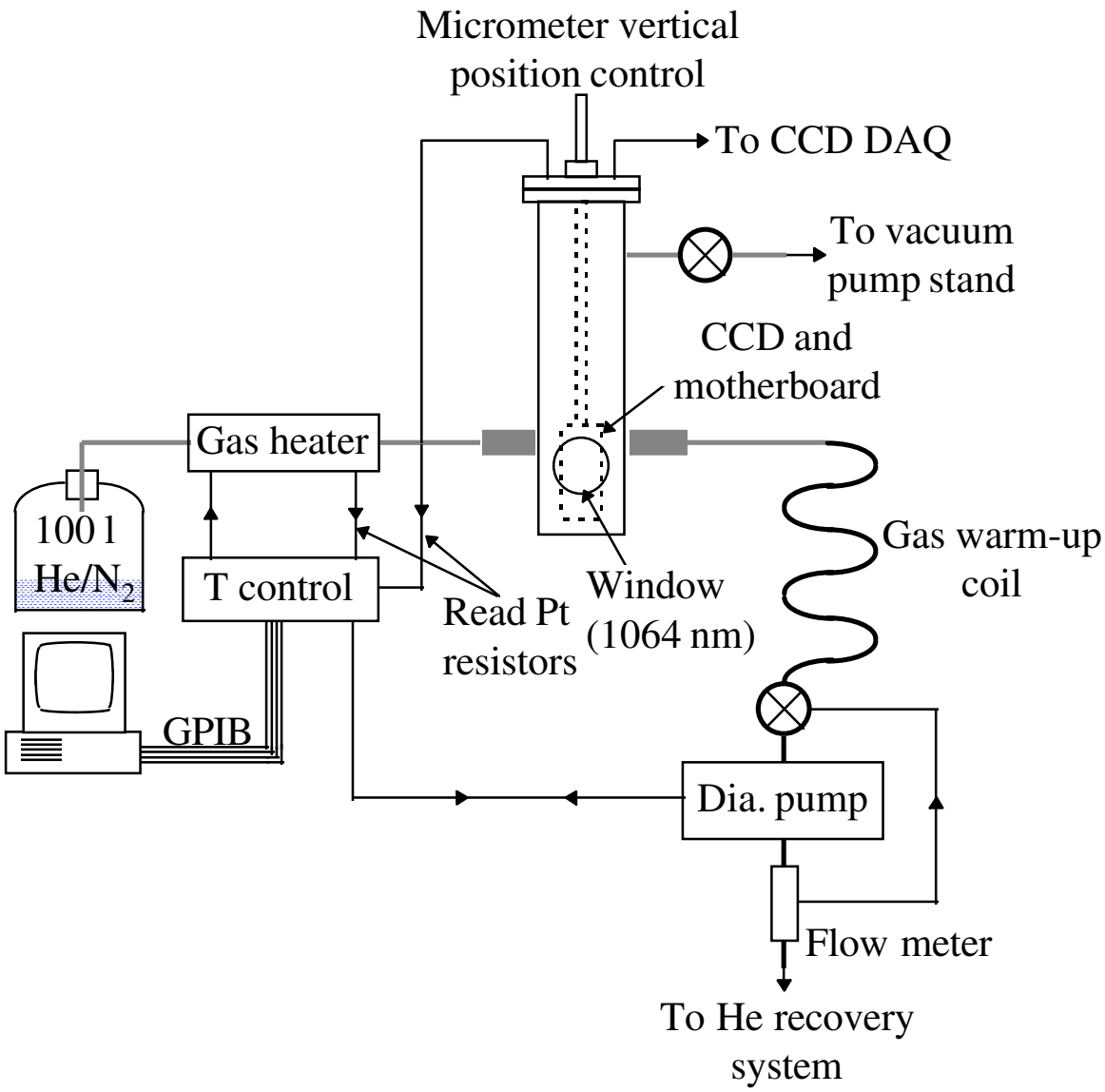
Progress with Liverpool CCD test system

- Schematic of proposed system.



Items available

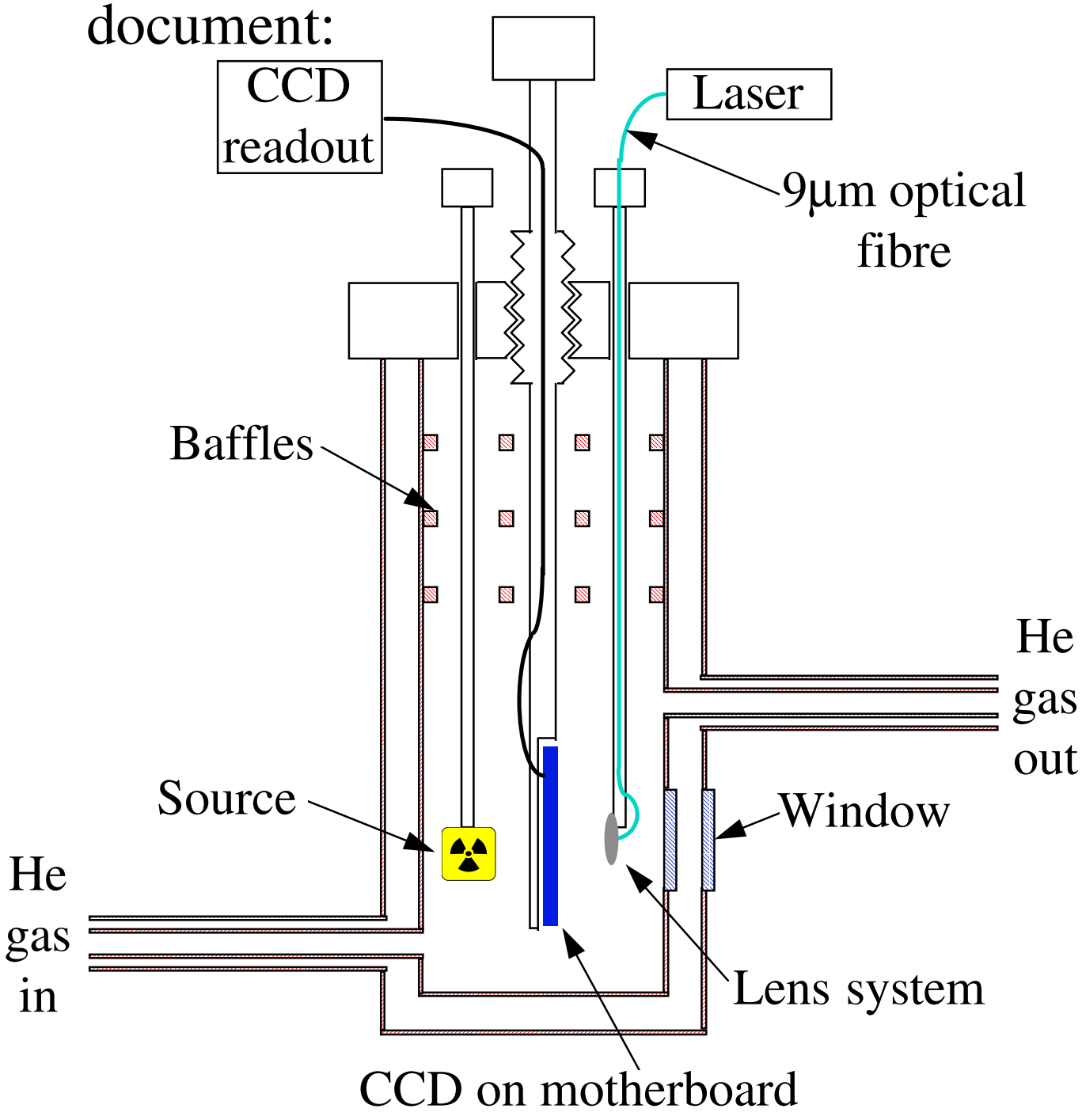
- 100 l He/N_2 dewar.
- Vacuum pump stand, but advantageous to purchase absorption pump to reduce risk of vibration.
- GPIB board.
- Diaphragm pump.

Temperature control

- Dewar available.
- Pressure control system required.
- Drawings for transfer line and heater unit exist, slight modification needed.
- Can construct in Liverpool workshops.
- Automatic flow control must be purchased.
- Temperature controller must be purchased.
- PC needed with GPIB card and LabView.

Cryostat

- Suggested design changed w.r.t. PPESP document:



Cryostat cont.

- Detailed design/drawing needed including consideration of:
  - Max. possible size of CCD plus motherboard.
  - Optics (spot size ~15μm achievable as illustrated, any requirement for sub-pixel size spot?).
  - Mechanical stability (want good precision at end of longish “lever” and ability to move CCD).
  - Better to move CCD (illuminated point always visible with small window) or laser (need large window?).

Simulation Software

- Steve Biaggi has looked at EMLAB documentation.
- Advantageous to run on system (PC) with ~1Gb memory.
- Memory ~£1/Mb up to 750Mb, then costs increase to ~£2/Mb.
- PC with ~1Gb ~£2 750.
- EMLAB ~£5 300
- CDF (Liverpool) have decided EMLAB more sophisticated than they require...

Sensible “immediate” purchases

- Pressure control system for Dewar.
- Materials for heater construction (£470).
- Automatic flow control valve (£800).
- Valves. flow meters.
- Temperature controller ITC502 with 3 channel option (£2 400).
- Platinum resistance thermometers (£300).
- LabView + PC (?)
- CES readout electronics (£9 000).
- PC with ~1Gb memory (£2 750).
- EMLAB (£5 300).
- Total ~£21 000.
- (Keeping ~£10 000 departmental funds in reserve.)

Summary

- Heater design essentially complete, drawings need a few man-hours work.
- Cryostat design requires work, no drawings ready.
- Items to value of ~£21 000 which can be sensibly purchased in this financial year identified.
- Should we start trying to spend the money we have been given?