



Society of Electron Microscope Technology

([Http://www.semt.org.uk](http://www.semt.org.uk))

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S.E.M.T. HALF- DAY MEETING

Wednesday 27th October 2004
The John Hanbury Lecture Theatre

The School of Pharmacy, 29-39 Brunswick Square, London WC1N 1AX

- 12.30 p.m. **Registration**, including a *Free Buffet Lunch*.
- 2.00 p.m. **Introduction**: Chair, *Barry Dowsett*.
- 2.05 p.m. **“Cardiac capillary morphology in ischaemia and reperfusion”**.
Dr. Catherine Molyneux; National Heart & Lung Inst. Imperial College, London.
- 2.40 p.m. **“Gene Therapy, Cystic Fibrosis and SEM”**
Jackie Donovan; National Heart & Lung Inst. Imperial College, London.
- 3.15 p.m. **Tea, Coffee.**
- 3.45 p.m. **“Cryo-EM studies of the AAA ATPase p97 and its adaptor complexes”**
Dr Fabienne Buron ; Centre for Structural Biology, Imperial College, London.
Buron
- 4.20 p.m. **“Early years of TEM at Rothampsted”**
Dr. Roy Woods ; Rothampsted Research Labs, Harpenden.
- 4.55 p.m. **Annual General Meeting.**
- 5.30 p.m. **Wine Reception.**
- 6.30 p.m. **Conference Dinner.**

S.E.M.T. 27 October 2004

Cardiac capillary morphology in ischaemia & reperfusion

Dr Catherine Molyneux

National Heart & Lung Inst, Imperial College, London

Ischaemia - reduced blood flow below that required to allow steady state metabolism.

Cardiac ischaemia can be diffuse or acute. The only treatment is reperfusion, but this may cause further damage - arrhythmias, necrosis, myocardial stun, "no-reflow phenomenon".

Monastral Blue contains copper phthalocyanin.

She made blood-vessel casts with Batson's no.17 plastic replica kit + methyl methacrylate - obtained from Germany. The tissue is then corroded away with NaOH, then rinsed in water, then methanol.

Experimentally, treatment with vitamin E + ascorbic acid prevent "no reflow", & the capillaries actually look more regular than in the controls!

Gene Therapy, cystic fibrosis & SEM

Jackie Donovan

National Heart & Lung Inst, Imperial College, London

CF is a single-gene disorder, a chloride channel defect.

Pseudomonas adherence to nasal epithelium is reduced by CFTR gene therapy in vitro; there are possibilities for clinical use.

Early years of TEM at Rothampsted

Dr Roy Woods

Rothampsted Research Labs, Harpenden

He had been there since 1954

America had given us 7 RCA 1Bs after the war - they had given a lot of problems.

1950ish Smethurst in Bolton started making grids.

1959 Horne's paper on negative staining of viruses was rejected by Nature, but published in the Times supplement.

Early 1960s - adenovirus was imaged.

1970 Rothampsted got a SEM.

Rothampsted is near Welwyn, where Jeol has its base.

(Derek Lovell said the autofocus on the Hitachi 8600 is perfect, if set up correctly)