

Departments of the Research School

Solid State Physics

A research development into some aspects of solid state physics was foreshadowed in the triennium submission for 1967-69. The proposal was linked to use of the pulsed, high field magnets being developed by Carden. Funding, recommended by the Australian University Commission for the following triennium, enabled establishment of a department and the appointment of Alan Runciman as the founding head in 1970. He arrived in February 1971. Numbers built up quickly during the year so that there were three other academic staff, three research assistants and two technical staff by year end. One graduate student had arrived, with a second to begin early in 1972. The initial research program, mainly directed to magneto-optical phenomena, made limited use of Carden's magnets, but soon became based around use of super-conducting magnets instead. A laser spectroscopy activity, including Neil Manson and others, gradually evolved also.

With Robert Street's appointment in 1974, a separate, but associated, Director's Unit, involving low temperature physics and magnetism, was established "at the expense of inconvenience to others". The two groups merged when Street left in 1978.

Runciman stepped down as head of the department for health reasons in 1985. Andrew Stewart took over as head until the mandatory review recommended dis-establishment. This was duly implemented as of December 31 1986; staff were transferred either to the newly-created Laser Physics Centre or to Applied Mathematics.



The Department of Solid State Physics (1984).

*Back row (L to R) Dr Reddy, Dr Hasan, Dr Wells (visitor), Dr Whittle, Mr Rimmel, Dr Silversmith, Ms Jurasic, Mr McRae, Mr Sampietro, Mr Hyde, Dr Radlinski, Dr Wilshire, Dr Jayasuriya.
Front row (L to R) Mr Carlton, Dr Manson, Professor Runciman, Dr Stewart, Dr Calka.*



The Department of Solid State Physics established an excellent reputation for crystal growing, principally due to the expertise of its skilled crystal grower Gino Sampietro. One series of crystals grown for Runciman, was doped with tiny amounts of uranium impurities. These crystals were grown by pulling them out of a molten puddle of the material contained within the coils of a radiofrequency furnace.

When, in 1982, the Sydney Harbour Bridge celebrated its 50th birthday and the laser hired to draw pictures on the Opera House and on the clouds broke down, a laser from the Department of Solid State Physics filled the breach. Staff of the department later arranged to draw pictures on the tower of the Nuclear Physics facility by directing a laser beam out of a window of their laboratories in the Huxley Building, as an Open Day attraction. Children could literally put their names up in lights, while the most popular image was that of a kangaroo bouncing up and down on the side of the tower.

