

KENT PHYSICS CENTRE

Autumn 2013

All meetings will be held on Tuesday evenings at 7.30 pm in **Rutherford Lecture Theatre 1**, the main lecture theatre, at the University of Kent. Further information can be obtained from Dr C. Isenberg (Email: C.Isenberg@kent.ac.uk Tel. 01227 823768). The lectures are sponsored by the Institute of Physics.

Tuesday 8 October 7.30 pm

INSIDE THE CENTRE: THE LIFE OF J. ROBERT OPPENHEIMER

Professor Ray Monk, University of Southampton

Robert Oppenheimer is among the most contentious and important figures of the twentieth century. As head of the Los Alamos Laboratory, he oversaw the successful effort to beat the Nazis to develop the first atomic bomb – a breakthrough which was to have eternal ramifications for mankind, and made Oppenheimer the ‘father of the bomb’.

Oppenheimer was a man of diverse interests and phenomenal intellectual attributes. His talent and drive allowed him as a young scientist to enter a community peopled by the great names of twentieth-century physics – men such as Bohr, Born, Dirac and Einstein –and to play a role in the laboratories and classrooms where the world was being changed forever.

But Oppenheimer was not a simple story of assimilation scientific success and world fame.. A complicated and fragile personality, the implications of the discoveries at Los Alamos were to weigh heavily upon him. Having formed suspicious relations in the 1930’s , in the wake of the allied victory in World War Two, Oppenheimer’s attempts to resist the escalation of the Cold War arms race would lead to many questions of his loyalties – and set him on a collision course with Senator Joseph McCarthy and his which hunters.

Tuesday 22 October

GLASS: A Physicist's Look Inside

Professor R. J. Newport , University of Kent

Making glass is one of our oldest technologies, refined and developed through the millennia and having an impact in all aspects of modern life. From its deceptively simple beginnings, glass has found a place in art and technology: a material of beauty as well as utility. In our current century, glassy materials are now used as smart drug delivery systems and even as scaffolds for regenerating a patient's lost bone. In his talk Bob Newport will try to unravel some of the science behind glass and to reveal aspects of modern research into its atomic scale properties.

Professor Sean Ryan, Astronomer

University of Hertfordshire

Tuesday , 26 November

THE OPTICS OF VERY SMALL STUFF

Dr Gregory Wurtz

King's College London

This presentation will give a broad introduction of the optics of metallic nano-objects. How does the shape, size and environment of these objects, or even the way we observe them, change their colour or give the illusion of their absence? These are a few questions that will be answered in this presentation.

2013 CHRISTMAS SCIENCE LECTURES

Wednesday 27 November

Demonstrating Newton's Laws On Earth And In Space

Dr Cyril Isenberg

School of Engineering and DA, University of Kent

This lecture will explore some phenomena that can be explained and quantified by the application of Newton's laws. These include gravitational motion along constrained paths, motion in the presence of magnetic fields, chaotic motion, the Bernoulli effect, Hero's engine, the rattleback and space exploration using the gravitational assist slingshot effect.

Thursday 28 November at 11.00 am and repeated at 2.30 pm

Electricity and X-rays

**Dr Stuart Field, Consultant Radiologist,
Kent and Canterbury Hospital**

This spectacular lecture/demonstration is a mixture of historical fact, practical demonstrations of static, high voltage, electricity and X-rays & equipment images from the early days of X-ray use. Much of the equipment used has been made in the medical physics department workshop at the hospital.

It is suitable for any ages from 5 years upwards and will be similar to the Royal Institution Christmas lectures made famous in the 1950's by Sir Lawrence Bragg.

Spring 2014

Professor Christofer Toumazou

(Not confirmed)

Electrical and Electronic Engineering Department, Imperial College London

Tuesday 1 April

Joint meeting with SEKAS

Professor Dame Jocelyn Bell Burnell

University of Oxford