

# Bob and CONFORM

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# Why CONFORM?

Construction Of a Nonscaling FFAG for Oncology, Research and Medicine

'Basic Technology' programme, across Research Councils. Introduced in 1999. Ceased in 2008.

*"To develop new and novel technologies with the potential to be adapted for use on a diverse range of research problems and challenges. It seeks to create fundamentally new capabilities across all areas of science, and form the basis of new industries of the future"*

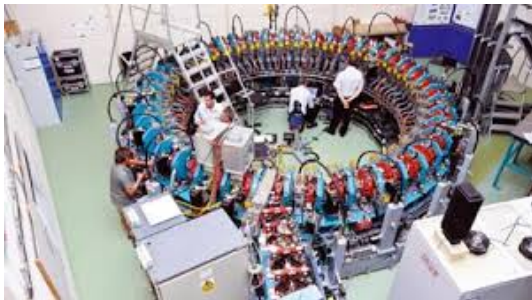
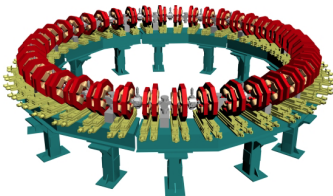
Bid to BT programme put together by mix of people and institutes: Bob, me, Ken Peach, Gillies McKenna, Bleddyn Jones, Karen Kirkby, Rob Edgecock and many others...

Success! £8M awarded over 3.5 years for 3-part programme: EMMA, PAMELA and 'Applications'

# EMMA: the Electron Machine with Many Applications

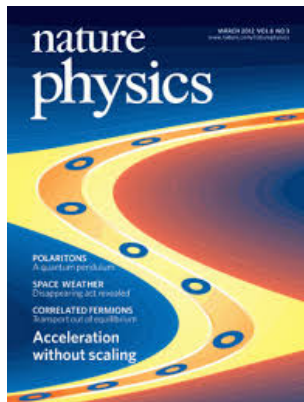
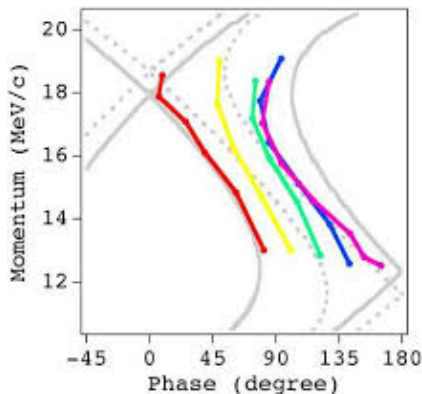
formerly 'Electron model for a muon accelerator'

EMMA in principle:  
computer-generated  
model. 42-fold  
symmetry, pairs of  
movable F and D  
magnets



EMMA in reality: with  
power supplies, cooling,  
beam injection and  
humans. "More  
complicated than the  
SRS"

# Emma triumphant



Injected bunches have stable orbits and can be accelerated in the 'serpentine' channel.

Important because shows fast acceleration is possible. Limited by RF power into the system, not timescale of magnets.

# PAMELA

## Particle Accelerator for MEDical Applications



Design project for FFAG for radiotherapy. Still only a design - but got the UK accelerator community thinking about protons and light ions. Effects still being felt.

Showed that an FFAG could work for light ions, where cyclotrons and synchrotrons have great difficulties.

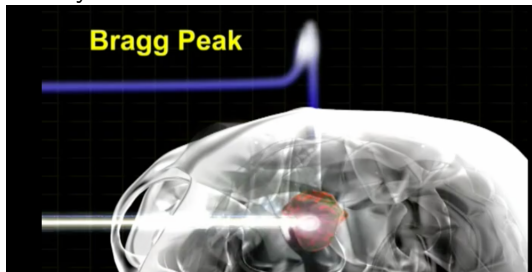
# Publicity - in the press

From the Mail on Sunday  
A substantial (but very readable) article about accelerators in general and EMMA in particular.  
Written by David Rose - with obvious help from Bob



# Publicity - on video

Video about the CONFORM project with Lord Robert Winston speaking (very convincingly) words written for him by Bob.



Very effective graphics - even the mandatory Bragg Peak plot gets a new twist.

# From FFAGs to ADSRs

Anyone recognise this guy?





# From FFAGs to ADSRs

Lord Drayson, Minister for Science  
2008-2010



Prospect of a high current, medium energy FFAG proton accelerator makes Accelerator Driven Subcritical Reactors and thorium fuel an even more attractive prospect.

Thorough and authoritative report prepared at request of Lord Drayson, and put together under Bob's leadership.

Unfortunately Drayson didn't last long enough to receive it....



# CONFORM - the last word

Technical success: built and commissioned the world's first nsFFAG

'New industries of the future'? Too early to tell.

Caught the imagination - not just of those on the project but those outside. Scientists, politicians, and the general public

– all thanks to Bob