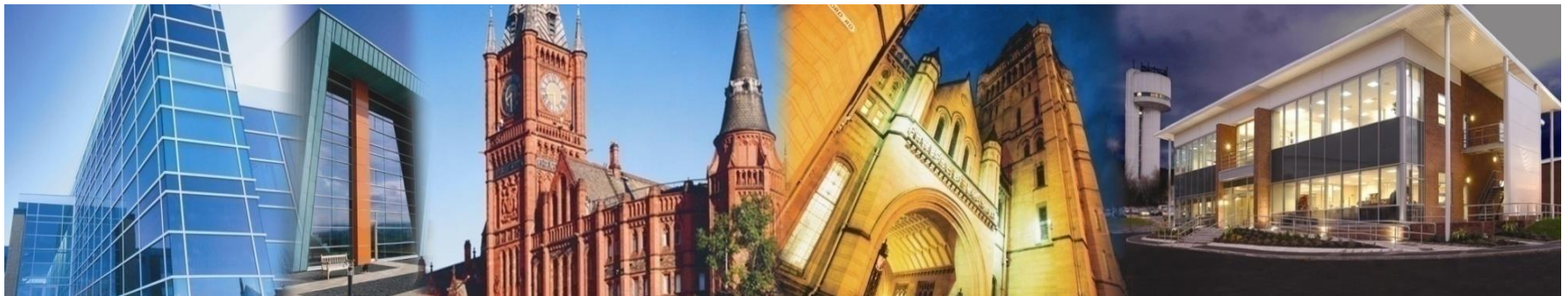


# POTENTIAL UK COMMUNITY INTEREST and ROLE in the FCC STUDIES

*Swapan Chattopadhyay*



The Cockcroft Institute  
of Accelerator Science and Technology



# UK Feedback

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- **Feedback from Prof John Womersley, Chief Executive of Science and Technology Facilities Council (STFC), UK at the Cockcroft Institute Board meeting.**
- **Encouraged to engage with the UK community, STFC and its Accelerator Strategy Board in recognising the critical importance for UK in participating strongly in the FCC studies.**
- **Below is our current understanding of voluntary interest in contributions that may be possible towards the FCC from UK.**

# Cockcroft Institute Interest/Expertise

## MANCHESTER

**Rob Appleby:** IR design, optics and detector integration, synchrotron radiation in the ring/IR, electron/proton ring optics, collimation, crab cavity dynamics

**Hywel Owen:** Electron storage ring optics

**Guoxing Xia:** Collective instabilities in the ring (ion instability (fast ion instability), electron cloud, intrabeam scattering, beam induced wakefields)

**Roger Jones:** Wake fields and impedance

## LIVERPOOL

**Andy Wolski, David Newton:** Proton and electron beam dynamics, Crab cavity dynamics

**Carsten Welsch:** Beam Diagnostics

## LANCASTER

**Graeme Burt, Amos Dexter:** RF and crab cavities engineering systems

**Ian Bailey:** Positron Source

## ASTeC

**Deepa Angal-Kalinin, Bruno Muratori:** Beam dynamics and beam-beam interactions

**Peter McIntosh:** RF systems and Crab cavities

**Shrikant Pattalwar:** Cryogenics, Collimation

**Oleg Malyashev, Reza valizadeh:** Vacuum, coatings

# Across UK Interest/Expertise

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## JOHN ADAMS INSTITUTE

*Andrei Seryi (+):* p-p only (not TLEP)

## HUDDERSFIELD

*Roger Barlow (+):* Collimation

## SOUTHAMPTON

*Cryogenics*

## RHUL

*Stew Boogart:* Diagnostics

*Steve Gibson:* Collimation for protons and electrons

# POSSIBLE WORK PACKAGES

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- **Beam Dynamics**  
(Instabilities, Beam-beam, e-cloud, Luminosity lifetime, Feedback systems)
- **RF Systems**  
(High power, Low level RF control, Accelerating and deflecting cavities)
- **Lattices and Optics**
- **Beam Diagnostics and Instrumentation**
- **Machine Detector Interface**  
(Collimation, Luminosity monitor, Energy monitor)
- **Cryogenics**
- **Vacuum**

# HORIZON 2020

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- **UK has established strong credibility and track record as:**
  - (i) the largest contributor to the EU FP-7 HI-Lumi LHC project after CERN;**
  - (ii) providing the Chair of the Collaboration Board;**
  - (iii) hosting official HL-LHC kick-off meeting.**
- **UK accelerator community intends to join CERN fully in the Horizon 2020 bid for FCC**