Laser-hybrid Accelerator for Radiobiological Applications (LhARA)

The LhARA collaboration

- 1 Department of Aeronautics, Imperial College London, Exhibition Road, London SW7 2AZ, UK
- 2 Division of Cancer Sciences, Faculty of Biology, Medicine and Health, The University of Manchester, The Christie Proton Therapy Centre, The Cristie NHS Foundation Trust, Wimslow Rd, Manchester M20 4BX
- 3 Dept of Medical Physics and Biomedical Engineering, University College London, WC1E 6BT
- 4 DG Unit, CERN, CH-1211 Geneva 23, Switzerland
- 5 Cockcroft Institute, Daresbury Laboratory, Sci-Tech Daresbury, Keckwick Ln, Daresbury, Warrington UK
- 6 University of Strathclyde and Cockcroft Institute for Accelerator Science, Daresbury
- 7 Central Laser Facility, STFC Rutherford Appleton Laboratory, Harwell Oxford, Didcot OX11 0QX, UK
- 8 Christie NHS Foundation Trust, Wilmslow Rd, Manchester, M20 4BX
- 9 The Clatterbridge Cancer Centre, Bebington, CH63 4JY, UK
- 10 Department of Computing, Imperial College London, Exhibition Road, London SW7 2AZ
- 11 Corerain Technologies, 14F, Changfu Jinmao Building (CFC), Trade-free Zone, Futian District, Shenzhen, Guangdong, China
- 12 Imperial College London, CRUK PPI group, Charing Cross Hospital, London W6 8RF
- 13 Imperial College NHS Healthcare Trust, The Bays, South Wharf Road, St Mary's Hospital, London W2 1NY, UK
- 14 Department of Surgery and Cancer, Imperial College, Hammersmith Hospital London W12 0NN
- 15 The Institute of Cancer Research, 123 Old Brompton Road, London, SW7 3RP, UK
- 16 INFN Catania, Via Santa Sofia,64 95123 Catania Italy
- 17 ISIS Neutron and Muon Source, STFC Rutherford Appleton Laboratory, Harwell Oxford, Didcot OX11 0QX, UK
- 18 Institut Curie-Orsay Research Center, Bat a Campus d'Orsay, 91400 Orsay, France
- 19 John Adams Institute for Accelerator Science, Imperial College London, London SW7 2AZ, UK
- 20 John Adams Institute, University of Oxford, Keble Rd, Oxford, OX1 3RH.
- 21 John Adams Institute, Department of Physics, Royal Holloway, University of London, Egham, TW20 0EX, UK
- 22 Leo Cancer Care, Broadview, Windmill Hill, Hailsham, East Sussex, BN27 4RY, UK
- 23 Department of Molecular and Clinical Cancer Medicine, University of Liverpool, Liverpool, L3 9TA, UK
- 24 Institute of Systems, Molecular and Integrative Biology, University of Liverpool, Biosciences Building, Crown Street, Liverpool L69 7BE
- 25 Maxeler Technologies Limited, 3 Hammersmith Grove, London W6 0ND, UK
- 26 Department of Medical Physics, University Hospital Birmingham Foundation NHS Trust, Edgbaston, Birmingham, B15 2TH
- 27 Department of Medical Physics, Hampton University Proton Therapy Institute, Hampton, VA 23666
- 28 National Physical Laboratory, Hampton Road, Teddington, TW11 0LW, UK
- 29 Department of Oncology, University of Oxford, Old Road Campus Research Building, Roosevelt Drive, Oxford, OX3 7DQ, UK
- 30 Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, UK
- 31 Patrick G Johnston Centre for Cancer Research, Queens University Belfast, 97 Lisburn Road, Belfast, BT9 7AE
- 32 Particle Physics, Denys Wilkinson Building, Keble Rd, Oxford, OX1 3RH
- 33 Particle Physics Department, STFC Rutherford Appleton Laboratory, Harwell Oxford, Didcot OX11 0QX, UK
- 34 School of Mathematics and Physics, Queen's University Belfast, University Road, Belfast, BT7 1NN, Northern Ireland, UK
- 35 School of Physics and Astronomy, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK
- 36 Budker Institute of Nuclear Physics, 11 Academician Lavrentyev Avenue, Novosibirsk, 630090, Russian Federation

- 37 Department of Physics, Imperial College London, Exhibition Road, London SW7 2AZ, UK
- 38 Department of Physics, Lancaster University, Bailrigg, Lancaster LA1 4YW, UK
- 39 Department of Physics, University of Liverpool, Liverpool L69 7ZE, UK
- 40 Department of Physics and Astronomy, The University of Manchester, Oxford Rd, Manchester, M13 9PL, UK
- 41 Department of Physics, Novosibirsk State University, 2 Pirogov Street, Novosibirsk, 630090, Russian Federation
- 42 Department of Physics, Royal Holloway University of London, Egham, Surrey, TW20 0EX, UK
- 43 Department of Physics, University of Surrey, 388 Stag Hill, Guilford, ,GU2 7XH, UK
- 44 Department of Physics, Faculty of Science and Engineering, Swansea University, Singleton Park, Swansea, SA2 8PP
- 45 Rosalind Franklin Institute, Harwell Campus, Didcot, OX11 0QX, UK
- 46 Department of Radiation Oncology, Stanford University, Stanford, CA 94305, USA
- 47 Dept. Radiation Physics and Radiobiology, Imperial College Healthcare NHS Trust, London, UK
- 48 STFC Daresbury Laboratory, Daresbury, Cheshire, WA4 4AD, UK
- 49 Department of Physics, SUPA, University of Strathclyde, John Anderson Building, 107 Rottenrow East, Glasgow G4 0NG, UK
- 50 Institut Curie, Universit PSL, CNRS UMR3347, Inserm U1021, Signalisation Radiobiologie et Cancer, 91400 Orsay, France
- 51 nan
- 52 Department of Radiology, Netherlands Cancer Institute-Antoni Van Leeuwenhoek, Amsterdam, The Netherlands