# NOTIZIARIO

## Neutroni e Luce di Sincrotrone

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# SUMMARY

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**Cover photo.**
Picture of two ancient Japanese blades according to the traditional display arrangement and drawings of the INES and ENGIN-X diffractometers at ISIS used to analyse them.

# Italy-UK workshop on imaging
## and life sciences applications of new light sources

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J. Marangos

The emergence of new, free electron laser, based light sources is promising major impact on imaging and biological sciences. With free electron lasers under construction in Italy and operating in Germany and the USA it was seen as timely to reflect upon opportunities in this scientific area. Therefore a bilateral meeting between Italian and UK scientists was organised in the spring of 2010 to examine the best way to use the scientific strengths in these two countries to build effective collaborative programmes. This followed from a meeting held at the British Ambassadors Residence in Rome in March of last year.

The meeting took place at the Italian Cultural Institute in Belgravia, one of London's most prestigious neighbourhoods. Around 50 scientists gathered at this very agreeable venue and took part in wide ranging discussions and an exchange of ideas on the topic of imaging and life sciences applications of new light sources. Participants were drawn from a range of academic institutions and national laboratories in Italy and the UK along with representatives from the Italian embassy and from industry.

The meeting was begun in fine style by a keynote address by Gerhard Materlik (Director of the Diamond Light Source) on "Visions for future light source science" that reviewed the new capabilities that are emerging from the FEL facilities that are built, under construction and planned. This was followed by a session chaired by Luigi Palumbo (INFN, Italy) that included further reviews of two FEL facilities; the Fermi@Elettra project presented by Fulvio Parmigiani (INFN, Italy) and the future high repetition rate seeded FEL in the UK (NLS) by Richard Walker (Diamond). Having established the capabilities of the new light sources through these presentations and the accompanying discussions the focus then shifted to applications to biosciences. Silvia Morante (University of Rome Tor Vergata) highlighted the Bio-science case for the SPARX project and David Klug (Imperial College) discussed the application of far-IR from multi-colour THz beams to the 2D spectroscopic measurement of proteins. Anton Barty (CFEL/DESY) then presented a talk on recent progress in X-ray imaging with FELs that conveyed the excitement and promise in that fast emerging area. Following a pleasant and discussion filled lunch we resumed in the afternoon in a session chaired by Andrea Aparo (Finmeccanica) which focussed on medical applications. Cristina Messa (University of Milano Bicocca) explained the current state of the art in X-ray dagnostic molecular medicine and Ralf Menk (Elettra, Trieste) discussed the new R&D imaging techniques available to cancer research. Guido Cavaletti (University of Milano Bicocca) gave the final talk on nanomedicine in biomedical sciences.

Having had this series of fascinating and informative talks the meeting was then completed by an extended round table discussion chaired by Dame Louise Johnson (Oxford) with panellists Andrea Aparo, Luca Federici, David Klug, Gerhard Materlik and Richard Walker. This tackled the issue of future prospective in Italian/UK collaboration with light sources. A productive

discussion took place that reaffirmed the need to continue effective engagement at the broad level as well as to encourage individual collaborative projects. Hopefully UK users will be in the fore once the Fermi@Elletra laser becomes available to users in the near future. It is clear that there is considerable scope for lasting and highly effective collaborations between scientists in these two countries. On a related note a recent meeting of the UK FEL community (Royal Society, April 26th) concluded with the setting up of the "UK Forum for FEL Science". This Forum will be an independent body that will strive to foster the growing activities of FEL science and technology within the UK. It will also serve to facilitate scientists become users of the now operating international facilities. It will no doubt serve to continue to nurture Italy-UK links in this emerging area.

*on the top:*
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