



## The UK Condensed Matter Programme on FELIX

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### Abstract

Researchers from the United Kingdom have been accessing FELIX since 1992, shortly after the first lasing of the device. Aside from overviewing the project and the universities involved, pump-probe experiments utilising some of the unique aspects FELIX, namely its short pulsed capabilities and very long wavelength operation will be discussed in the context of measurements on semiconductor quantum wells designed for application in mainstream terahertz technologies. In particular, the influence of hole temperature on hole-LO phonon intersubband scattering and the observation of relaxation bottlenecks in p-type materials will be overviewed, as well as the observation of anomalously long free carrier lifetimes for electrons excited out of stepped quantum wells. Emphasising the multidisciplinary nature of the programme, infrared quantum beat and generalised coherent transient spectroscopy of spatially localised H<sup>+</sup> vibrations will also be presented.