Crystal Capability

A brief guide to synthetic crystals, their properties and applications

Located within easy reach of the Channel Tunnel with a Eurostar connection at Ashford International to Margate, the port of Dover and both the M2 and M20 motorways, Hilger Crystals’ well established manufacturing plant at Margate is fully equipped to produce a wide variety of crystal materials for a range of specific applications.

To obtain further details please call the Hilger Crystals Sales Office on 01843 231166

Hilger Crystals
Westwood, Margate, Kent, CT9 4JJ, UK
Tel: +44(0)1843 231166
Fax: +44(0)1843 290310
email: sales@hilger-crystals.co.uk
www.hilger-crystals.co.uk
Crystal Capability
Hilger Crystals has a long established history and proven reputation in the production of high quality synthetic crystals for a wide variety of applications. The result of this experience is that Hilger Crystals can offer a comprehensive and flexible capability in satisfying the specific needs of customers. The extensive range of crystal materials available covers applications such as infra-red spectroscopy and X and gamma ray detection. Many products can be supplied with short lead times to custom design requirements.

Scintillation Crystals
Hilger Crystals produces an extensive range of scintillation crystals (see Materials Index overleaf) chosen for their high density, excellent light output and short decay constants. Hilger scintillation crystals are employed in X and gamma ray detectors and other non destructive testing e.g. medical applications, baggage scanning systems and academic research. High quality raw materials and a strictly controlled growth environment ensure that all Hilger scintillation crystals achieve the high standard required for low background applications in research and critical commercial applications. Crystals can be supplied as a single unit or in a complete assembly.

Thallium doped Sodium Iodide
Hilger Crystals is the major producer of thallium activated sodium iodide in the UK. Supplied to the UK nuclear industry for many years these crystals are subject to stringent production and testing procedures to ensure a consistent high quality is maintained. Thallium activated sodium iodide crystals are normally supplied in aluminium housings but can also be supplied as complete detectors.

Imaging Arrays
Imaging arrays can be either linear or two dimensional and can vary in size from 5mm to 200mm. Individual pixels can be as small as 50 microns depending on the material and the thickness. The imaging array can be coupled directly to a position sensitive photomultiplier tube, CCD array or linear photodiode to form a complete assembly.

Infra-Red Materials
The various optical crystals available from Hilger (see Materials Index overleaf) are utilised as windows and beamsplitters for infra-red spectroscopy. A range of sizes from 2mm to 300mm can be supplied as either sawn blanks, fine ground blanks, pre-polished or polished finish. All ingots are tested for low absorption, low scattering and high uniformity.

Crystal Growth and Development
Co-operation between Hilger Crystals and prospective customers or commercial partners at the research stage of a new project or product development, is an area of special significance. Working in conjunction with many leading companies within the industry, Hilger Crystals is currently engaged in a variety of potential applications including medical, homeland security and physics experiments.

Customised Products
The variety and complexity of crystal applications is considerable with new applications constantly being introduced. A significant proportion of Hilger Crystals’ current business comprises crystal materials developed in conjunction with customer’s requirements. This practice ensures that the end user is supplied with the optimum product for the specified application and has proved successful for academic and commercial projects.

Process and Quality Techniques
As a science based business Hilger Crystals conforms to many best practice procedures including Operational Excellence, Product and Process Improvement, Six Sigma and Lean Manufacturing systems.