

# ESB

## INDUSTRY OPPORTUNITY

An efficient energy strategy and lowered carbon emissions are key global challenges of the 21st century. ESB own, operate, maintain, invest in and build power stations nationally and internationally. Power plants operate at high temperatures and pressures and require materials capable of tolerating these conditions. It is essential that ESB's power generation assets are operating efficiently, however failures occur from time to time. ESB needs to identify and understand these failure mechanisms in order to prevent future failures occurring. Microscopy and materials analysis are central to this need. ESB also provides an engineering consultancy service and has specialist personnel in the materials and chemistry areas of power plants.

## CRANN VALUE ADD

CRANN has long term energy related research programmes in new solar-cells/ super-capacitor devices, and a computational programme dedicated to energy related materials.

CRANN has deep expertise in the Physical Sciences, which has been applied to developing large scale renewable energy/ infrastructure projects. This knowledge supports Energy/Utility companies in testing of materials for power station and infrastructure solutions.

Many of CRANN's technical staff have been recruited from blue-chip multi-nationals, and have the experience and knowledge to translate an industry need or problem statement into a "real-world" solution, on a commercially oriented time scale.

Rather than making a significant capital investment in its own instruments, ESB has entered into an arrangement with CRANN whereby staff can access their facilities as required. Access to CRANN infrastructure and expertise enables companies like ESB to test power plant materials, to assist in root cause failure investigations and to engage in longer term R&D in a cost-effective manner. ESB has a long history of conducting these investigations in house and see the CRANN facilities as essential to maintaining this expertise. In addition, the relationship with CRANN allows ESB to draw on the expertise resident both within CRANN and in the wider university structure.

ESB has been working effectively with CRANN for the past two years and sees this relationship continuing in the future.

## CRITICAL CRANN ENABLERS

- Structured training courses, from industry experienced experts, to meet the needs and requirements of engineers and material scientists from an industrial perspective.
- Critical mass of high resolution imaging and materials testing equipment for a one-stop-shop solution to an industry problem.
- High specification microscopy research infrastructure, such as scanning electron microscopes [SEM], for high resolution, high throughput materials testing and qualification.

## TYPE OF ENGAGEMENT

### Industrial access to infrastructure.

Companies can work with CRANN to access structured hands-on training programmes and on-going support and consultancy for company employees performing advanced materials screening, analysis and characterisation.

*“ESB has identified CRANN as a key partner in providing the infrastructure, advanced characterisation tools and industry experience to support our businesses.”*

*Dr. Fionn Griffin, ESB*



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*Self Solving Materials Problems with  
Direct User Access and Support to  
High End Analytical Equipment*

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