Advanced Manufacturing

Advanced engineering and manufacturing are pivotal to the UK's business success, at home and abroad. Birmingham has long aligned its research programmes with industry and national priorities – and we now lead the way in significant areas.

We design engines of the future: Our world-pioneering Vehicle Technology Research Centre is developing power train systems and engines. Our Birmingham Centre for Railway Research and Education is designing tomorrow's railways – from materials and modelling to power and risk analysis. We are developing aerospace materials and models, including novel materials for aero-engines in collaboration with Rolls Royce.

A major frontier is the development of artificial biological materials, such as bone, for use in surgical substitution. These materials are not only structurally similar; they behave the same as the material they replace. This groundbreaking research is only possible because we have the technology and the know-how to conduct enhanced imaging of biological systems.

We support the UK food industry with product formulation engineering. We are working on radio frequency and microwave engineering to help meet the demand for new, internet-based services on small and mobile devices.

Another triumph is the translation of robotic systems into real-world applications, such as artificial intelligence.

In all these areas, we work alongside the giants of industry, such as Jaguar Land Rover, Proctor and Gamble and Unilever

Research areas:

- **Advanced materials engineering (/university/colleges/eps/research/advanced-manufacturing/advanced-materials.aspx)**
- **Automotive radar (/university/colleges/eps/research/advanced-manufacturing/automotive-radar.aspx)**
- **Engines for the future (/university/colleges/eps/research/advanced-manufacturing/future-engines.aspx)**
- **Formulation engineering (/university/colleges/eps/research/advanced-manufacturing/formulation.aspx)**

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