INDUSTRY AND TECHNOLOGY POLICY BOARD

The Institute of Materials, Minerals & Mining

DIVISIONS/ GROUPS / MATERIALS CYCLE	TECHNICAL DIVISIONS/GROUPS															
	SUSTAINABLE DEVELOPMENT ACTION GROUP															
	Applied Earth Science s	Mining Technology	Minerals Processing and Extractive Metallurgy	Petroleum and Drilling Engineering	Materials Science and Technology	Castings	Surface Engineering	Ceramics	Composites	Light Metals	Plastics and Rubber	Steel	Automotive	Biomedical Applications	Electronics Applications	Packaging
Materials Research and Development	X	X			X	X	X	X	X	X	X	X	X	X	X	X
Exploration	X	X		X												
Mining/Quarrying/Extraction	X	X	X	X			X	X								
Minerals Processing	X	X		X				X				X				
Materials Processing		X		X	X	X	X	X	X	X	X	X	X		X	X
Manufacture/Finishing				X	X	X	X	X	X	X	X	X	X	X	X	X
Products/Applications	X	X			X	X	X	X	X	X	X	X	X	X	X	X
Recycling and Sustainability	X	X		X	X	X		X	X	X	X	X	X		X	X

MINERAL INDUSTRY	**Applied Earth Sciences**	Exploration, economic and mining geology; geochemistry, mineralogy, remote sensing, geophysics, geostatistcs, metallogeny, deposit modelling, reserve and resource estimation, environmental baseline studies, hydrogeology, mineral economics, drilling and logging.
	Mining Technology	Planning, design and operation of underground and surface mines and quarries. Excavation support, slope stability, and rock mechanics. Water handling, pumping and surface discharge facilities. Ventilation: gas, fume and dust removal, cooling and mine environmental control. Mine engineering: mechanical and electrical reticulation and systems-machinery, equipment, fixed and mobile plant, control and communications systems. Transportation of mine production, materials and manpower. Control of subsidence and other surface effects. Safe mine closure, site remediation and re-use of land.
	Minerals Processing and Extractive Metallurgy	
	Petroleum and Drilling Engineering	Exploration, assessment and viability studies. Well design, drilling and production. Transport, refining and manufacture of fuels and industrial feedstocks.
	Sustainable Development	Support and facilitate an informed debate on SD in the Institute and enable the Institute as a credible consultee on SD issues. To engage with other parties (including government(s) [regional, national and international], NGO's, industry, academia and individuals) as appropriate to better inform decision making.

MATERIALS INDUSTRY, TECHNOLOGY AND SCIENCE	**Materials Science and Technology**	**High Temperature Materials,** power generation, aerospace, petrochemical, coatings, processing, fabrication, microstructure evolution, service performance, remnant life prediction. **Integrated Manufacturing Processes,** product & process modelling, sustainable manufacture, product and process data technology, supply chain management systems **Materials Chemistry,** thermodynamics, phase equilibria **Nanomaterials and Nanotechnology,** nanoparticles, fullerenes, nanotubes, nanocomposites synthesis, characterisation, structural & functional performance, fabrication, toxicity. **Particulate Engineering,** powder metallurgy,. **Rolling,** ferrous and non-ferrous metal rolling, flat and section rolling, science, technology and practice. **Smart Materials and Systems,** sensors and actuators, (multi) functional materials, biomimetics. **Structure of Materials,** **Superplasticity,** superplastic forming, materials processing, titanium and aluminium alloys, near net shape forming, metallic sheet processing, process simulation, tooling
	Castings	The production and the handling of liquid metals in the associated ceramics and refractories. The manufacture of patterns and other foundry tooling, and dies and moulds, and the production of cast products (usually but not exclusively metals) into shaped castings or continuously cast into semi-finished products. The design of filling and feeding systems, and the computer simulation of all aspects of the flow and solidification of metals and other materials. Particular markets are mining, petroleum and chemical plant, automotive and aeroapace industries.
	Surface Engineering	The design of a substrate and surface together to give cost effective performance enhancement. It incorporates single and duplex (multiple), traditional and innovative surface technologies in the design process. Special emphasis is placed on component processing for all sectors of manufacturing industry.
	Ceramics	All activities relating to the science, technology, manufacture and processing of ceramic materials, both functional and structural, inlcuding Building and Construction Materials, Cement and Concrete, Refractories and Engineering Ceramics and whitewares and sanitaryware. Raw material extraction and processing, material preparation and manufacturing processes, applications and service life, waste and recycling of materials and by-products. Characterisation and properties of Ceramic materials.
	Composites	The Composites Division's interests cover all technical, educational and strategic considerations of composite materials, while recognising the interests of other Divisions. These interests cover composites manufacture, processing and applications.
	Light Metals	The Light Metals Division exists to support the light metals industry with particular emphasis on aluminium, magnesium and titanium alloys. The Division's interests cover all technical, educational and strategic considerations associated with aluminiumm magnesium and titanium alloys . These interests include, processing, the uses and selection of materials and development.
	Plastics and Rubber	The Plastics and Rubber Division exists to support the plastics and rubber industry. The Division's interests cover all technical, educational and strategic considerations of polymers and materials where polymer content is significant. These interests include polymer manufacture, processing, applications and design.
	Steel	All activities relating to to the manufacture and application of steel and its products including selection and processing of raw materials and by-products, the iron, steel continuous casting, rolling, drawing, forging, pressing and other forming operations. Development and application of steels for automotive, construction, packaging, aerospace, oil and gas, energy, bearings, machining and general engineering.

END USER INDUSTRIES	**Automotive**	Design, Manufacture and End of Life of Vehicles: Knowledge Engineering, CAD, Product Model, Structure Analysis, Process Simulation, Rapid Prototyping, Joining, Tooling, Surface Finishing, Processing, Assembly, NDT< Adhesion, Rig Testing, Thermal Structural Analysis, Energy Audit, Coating, Sustainability, Recycling, Disposal, Life Cycle Analysis.
	Biomedical Applications	The Biomedical Applications Division aims to represent all materials engineers and other related technical disciplines with interests across medical applications in this multidisciplinary field. Its interests cover all aspects of the development and use of materials in medical applications, ranging from incontinence pads to aiding bone regeneration.
	Electronics Applications	The Board is concerned primarily with functional materials in electronics and related topics, and with the processing, characterisation and application of these. Amongst the materials included are: Semiconductors: bulk and thin film, crystalline, polycrystalline and amorphous. Technical ceramics: Dielectrics, ferroelectrics, pyro- and piezoelectrics Superconductors Magnetic Materials Optical and optoelectronic materials Polymers with optical and electronic functionality Materials for electronic packaging and assembly
	Packaging	The Packaging Divisional Board is concerned with packaging materials (steel, aluminium, plastics, glass, paper/board) including specialist, secondary or complementary materials such as adhesives, barrier layers and laminated structures. Packaging design, manufacturing, enabling technologies and recycling / environmental issues also fall within the scope of the Divisions' activities, often in collaboration with other Divisions of the Institute, or External Institutions such as the Institute of Packaging, or DTI. Recent activity has been focused upon functional, or 'smart' packaging materials and structures (for packaging, distribution and retail applications), in which we have specific expertise. Future activity will be steered by defined business drivers and 'Foresight' requirements for the packaging industry, together with the technology & innovation requirements.