



Companhia Brasileira de Metalurgia e Mineração (CBMM), located in Araxá, Minas Gerais, Brazil, is the world leader in the extraction, processing, manufacturing and marketing of niobium products.

The most important application for niobium is as an alloying element to strengthen high-strength-low-alloy steels used to build automobiles, high pressure gas transmission pipelines, ships and bridges. An important secondary role for niobium is to provide creep strength in superalloys operating in the hot section of aircraft gas turbine engines. Niobium is also utilized in stainless steel automobile exhaust systems and in the production of superconducting niobium titanium alloys used for building MRI magnets.

CBMM is the only niobium producer present in all market segments. With subsidiary companies in Europe (CBMM Europe in the Netherlands), in North America (Reference Metals Company in the USA) and in Singapore (CBMM Asia), CBMM dedicates special attention to its customers, wherever they may be around the globe. One of its main objectives is in the development

and dissemination of niobium technology throughout the industry. CBMM has funded research and development projects with its customers and independent institutions to increase the role of niobium in known applications and create new uses for the metal. As part of its program CBMM has supported the work of more than 300 research students in Brazilian Universities as well as in France, UK, Germany, Austria, Japan, USA, Canada, Russia, Ukraine and China.

CBMM is guided by strong sustainable development principles. Landscaping, conservation and ecology have been management concerns from the very beginning. The consolidation of these initiatives into an Environmental Management System enabled CBMM to be the first company in the world to have all its operations ISO 14001 certified. This accomplishment demonstrates the commitment of the management and shareholders to future generations as well as to environmental development, which involves human, social and technological spheres.

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Rolls-Royce is a world-leading provider of power systems and services for use on land, at sea and in the air. It operates in five global markets – civil aerospace, defence aerospace, marine, energy and nuclear – and has established strong positions within programmes that will shape the power-systems market for many years to come.

The success of its products is demonstrated by the company's rapid and substantial gains in market share. The company now has a total of 54,000 gas turbines in service, has a broad customer base comprising 600 airlines, 4,000 corporate and utility aircraft and helicopter operators, 160 armed forces and more than 2,000 marine customers, including 70 navies. The company has energy customers in 120 countries, and is a technology leader employing around 38,000 people in offices, manufacturing and services facilities in 50 countries. For Rolls-Royce, materials is a critical area of technology and we use partnerships between our internal research teams, suppliers and universities to secure a complete, integrated package of materials capability. Our engineering and

manufacturing bases around the world also require local materials support teams and groups. We are keen to encourage young people into engineering, not just in the UK but, as a global company, internationally, so the World Lecture Competition is something we very much support. We do a great deal within world of education to promote science and engineering – with teachers, parents and, of course, with students of all ages, from primary schools right through to universities.

The international perspective of the World Lecture Competition is encouraging. We have strong technology links in Singapore. In the United States we have several thousand employees and well established relationships with a number of key universities and research centres. We also have major repair and overhaul joint ventures in Europe, Singapore, Hong Kong and the USA.

Mike Hicks

*Materials and Mechanical Behaviour
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**Protea
Chemicals**

A member of the Omnia Group.

Protea Chemicals is the largest chemical and polymer distributor in Africa and operates from 13 sites, situated in all of the major business centres throughout Southern Africa.

The Protea Chemicals trading influence is extended across a range of industries, including mining, water care, the engineering trades including metal treatment, the petroleum industry, chemical formulating, food and beverage, fish canning, textiles and surface coatings. The company strive to be 'innovators in the world of chemistry'. The service ethic is paramount and emphasis is placed on integrity in all of the group's dealings with its more than 100 major suppliers and 6500 customers.

Protea Chemicals is an active member of CAIA, the watchdog of the chemical industry in South Africa, and as such is a signatory to the worldwide Responsible Care programme. This is an important aspect of Protea Chemicals' concerns for the protection of the environment.

Protea Chemicals strives continually to be seen by all of its stakeholders as 'more than just a chemical supplier'.

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