

In Germany's advanced manufacturing sector, the search is on for new materials to give German industrial products a competitive edge, with the result that research and development (R&D) funding by German governments and industry is on the rise. Canadian businesses that specialize in

New materials sector profile Germany

new materials will find ample opportunities in this growing high-tech sector.

Market overview

The size of the R&D budget set aside for new materials is a good indication of the size of the market. The total annual budget dedicated to this largely R&D field from all levels of German government is DM 750 million (\$525 million), directed to both public and industrial labs. In addition, German industry spent approximately DM 76 million (\$55 million) on new materials R&D in 1999, an increase of 7% over 1998. Certain fields, such as structural ceramics, experienced an even higher growth rate, approaching 20%.

The transportation and the information technology sectors have the greatest demand for new materials and consequently have the highest R&D expenditures. The development of energy-producing technologies, medical technologies and manufacturing technologies accounts for the remaining demand. R&D resources are distributed equally among ceramics, metals and polymers.

An important consideration when developing any new material is its impact on the environment. In the transportation and the energy-producing sectors, demand is high for technologies that protect resources or reduce emissions.

New materials, new projects

The following R&D projects are two examples of German funding at work in the field of new materials.

- The steel producer Ispat Stahlwerke and automobile parts producer Muhr & Bender are co-developing a super-hard steel for valve and axle springs. To date, the static hardness of this customized steel has been increased by 20% through the use of micro-alloy elements and by

optimizing the thermo-mechanical treatment.

- W.C. Heraeus and Siemens are developing a new ceramics-processing technology to produce miniaturized passive electronic components. The technology will be based on glassy ceramics and will integrate the passive components (resistors, capacitors and



inductors) into the substrate, while "Flip-Chip" techniques will be used for assembling the unhoused integrated switches. Multilayer substrates will be used for complex electronic switches.

Market access

Canadian companies can enter the German market in a number of ways. Trade shows are useful for contacting interested clients and for demonstrating products to management representatives, technical experts and buyers. The Materialica trade show and conference, which takes place in Munich from October 1 to 4 inclusive, is the most important of these. In 2000, 25 Canadian researchers from public and industrial labs, representing such diverse fields as magnesium, fuel cells, crystallography and polymers, attended the show in search of customers, partners and research contracts.

Another excellent way to make contacts in the German market is through R&D groups, either industrial

or public. In fact, many professors in public research institutes have worked in industrial labs and therefore have excellent contacts in their respective fields.

Useful sources of information and Web sites

Deutsche Gesellschaft für Materialkunde e.V. [German Society for Materials Science] Hamburger Allee 26, 60486 Frankfurt, Web site: www.dgm.de/

Business and technology development opportunities for 2001

- PARTEC 2001 International Congress for Particle Technology, Nuremberg — Mar. 27–29, Web site: www.partec2001.de/e/index.html
- CastTec 2001 International Trade Show for Casting and Information Technologies, Sindelfingen — April 3–5, 2001, Web site: www.casttec.com/eIndex.html
- ECCE 3rd European Congress of Chemical Engineering, Nuremberg — June 26–28, Web site: www.dechema.de/englisch/veranstaltungen/ecce/pages/f_ecce.htm
- ReX & GG The first Joint International Conference on Recrystallization and Grain Growth, Aachen — Aug. 27–31, Web site: <http://rex-gg.imm.rwth-aachen.de/>
- Third Lane 2001 "Laser Assisted Net Shape Engineering", Erlangen — Aug. 28–31, Web site: www.lft.uni-erlangen.de/SEITEN/LANE/2001/LANE_01_index_D.html
- Fourth World Congress on Oxidation Catalysis, Potsdam — Sept. 16–21, Web site: www.dechema.de
- European Metallurgical Conference 2001, Friedrichshafen — Sept. 18–21, Web site: http://region.tu-clausthal.de/gdmb/emc/about_emc.shtml
- Materials Week and Materialica 2001, International Congress on Advanced Materials, Processes and Applications, Munich — Oct. 1–4, Web site: www.materialsweek.org
- HT-CMC High Temperature Ceramic Matrix Composite Conference, Munich — Oct. 1–3, Web site: www.htcmc.org

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