

# Product and production integrated environmental protection

Axel Zweck

The requirements of environmental compliance today play a critical role in shaping technology innovation and development. These requirements act as basic guidelines for industries to design and innovate eco-friendly processes and products. With environmental controls becoming more and more strict, innovation based on environmental requirements would have a competitive advantage in the market. This article discusses issues pertaining to product and production integrated environmental protection in the new millennium.

## Introduction

II stages of the innovation process - from technology forecasting through technology assessment to technology transfer - are being influenced by global trends like integrated environmental protection. The objective of integrated environmental protection must be achieved through practical measures specific to each business.

This article, however, focusses on the environmental aspects rather than the practical measures usually considered in integrated technology management<sup>1</sup>. It describes a study covering four major areas of interest in selected sectors of German industry:

- Current and future activities in industrial environmental protection;
- Attitudes to environmentally relevant features of products;
- The plan of the German Federal Ministry of Education and Research (BMBF) for supporting production-integrated environmental protection; and

- Industrial R&D activities relevant to environmental issues.

Industrial environmental protection aims at a holistic, integrated pollution control system. This would include environmental management systems, materials flow management systems, incorporation of environmentally relevant aspects into product development, and in-house R&D in environmental aspects.

It was unlikely, however, that every industry selected for study was using every innovative means of industrial environmental protection. The study therefore *inter alia* probed attitudes, specifically industry attitudes to these activities. Indeed it hypothesized that any future measures to achieve the BMBF objective of integrated environmental protection could be successful only if, first, there was considerable company-level awareness of the problem and, second, within a given company there existed the potential to build such an integrated system. The study therefore examined attitudes and awareness lev



**Dr. Axel Zweck**  
Head

Future Technologies Division  
VDI Technology Centre,  
Mailbox: 10 11 39  
40002 Dusseldorf, Germany  
E-mail: zweck@vdi.de