



PROCESS ECONOMICS PROGRAM

SRI INTERNATIONAL
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Abstract

Process Economics Program Report No. 51B

ADVANCED COMPOSITE MATERIALS

(November 1992)

This report reviews the technology for manufacturing advanced composite materials (ACMs), thermoset and thermoplastic composites in particular. ACMs provide superior mechanical properties and are light in weight; they are used mostly in the areas of aerospace/aircraft and recreational sports.

In the 1980s, many companies rushed into the ACM industry with great expectations of major profits. Although several companies have dropped out in the past few years, as a result of the end of the Cold War and the general economic recession, future growth prospects lie not only in the continued demand for ACMs in the commercial aerospace and aircraft industries but also in the automotive industry.

Thermoset matrix resins considered in the report are epoxy, bismaleimide, and polyimide resins. Thermoplastic matrix resins considered are polyetheretherketones, polysulfones, polyphenylene-sulfides, polyetherimides, polyimides, and polyamideimides.

The ACMs presented in this report contain glass, carbon, graphite, and aramid fibers in the form of tows, rovings, or woven fabrics. Economics for fabricating composite structures are given in terms of cost factors based on the costs of matrix resin systems and fibers used in the structures.

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**ADVANCED COMPOSITE
MATERIALS**

SUPPLEMENT B

by **YU-REN CHIN**

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For detailed marketing data and information, the reader is referred to one of the SRI programs specializing in marketing research. The *CHEMICAL ECONOMICS HANDBOOK* Program covers most major chemicals and chemical products produced in the United States and the *WORLD PETROCHEMICALS* Program covers major hydrocarbons and their derivatives on a worldwide basis. In addition, the SRI *DIRECTORY OF CHEMICAL PRODUCERS* services provide detailed lists of chemical producers by company, product, and plant for the United States, Western Europe, Canada, and East Asia.

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