

It was predicted some 30 years ago, on a popular science television–programme, that the car of the future would be made of plastic. On a similar line, Japanese and American automobile manufacturers spent and lost huge sums of money trying to make all–ceramic engines. The inspiration for these ill–fated projects came not from a well–reasoned materials selection effort, but rather from fashion and exaggerated claims about the potential properties of certain materials.

By contrast, Geoff Davies has produced an intelligent and well–argued discussion of a range of materials for car bodies. The book is written in a style which reflects his deep knowledge of the subject, incorporating aspects of science, engineering and economics. The entire range of automobiles is covered, from cars for the mass–markets to concept cars, racing cars and those intended for the richest of consumers. It quickly becomes clear that both design and the use of materials depends on a large number of criteria, including the available fabrication and joining technologies, cost criteria, the behaviour of the engineered body in crash scenarios, the performance during service and finally, the environmental consequences at the end of life.

The book is pregnant with information. For example, this is the first time I have come across a proper discussion of dent–resistance and the test used to characterise this largely aesthetic property. The discussion emphasises the care with which the manufacturer selects a material. After all, a car whose appearance degrades rapidly during service is a bad advertisement and unlikely to ensure customer loyalty.

There are other snippets which are fascinating and inspiring. Did you know, for example, that the *Smart* car is constructed by hanging and bolting polycarbonate–panels on to a steel safety–cage? And that the method for recycling the polycarbonate is unclear?

The book is logical in its presentation, beginning with a general discussion of body–architecture and materials. This leads into the detail about the different types of cars, the manufacture and fabrication of components into assemblies, aspects of corrosion and recycling, and finally, industry trends. All the chapters are nicely illustrated with well–selected examples based both on history and the most modern of cars.

My only minor criticism is that the greyscale figures could be of better quality. But this is a thoroughly useful book which I think is essential reading for anyone involved in the development or use of materials for automobiles. Undergraduates would find it an important reference book, containing much more than is covered in any modern university course. For the teacher, the book contains stories which can be used to illustrate lectures and make them more meaningful to the audience. I like the book and wholeheartedly recommend it.