



## ADHESIVES AND THEIR RAW MATERIALS: FUTURE APPLICATIONS AND MARKETS

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### Status quo

The adhesive market is highly complex and dynamic with tens of thousands of products. This diversity applies for both finished adhesive products and the raw materials used to make them. The latter are also used in a wide range of other products – including adhesive formulations, sealants, coatings, paints/laquers, and plastics.

It is becoming increasingly important to know what adhesives and raw materials will be required in the future and the size of these markets. Early indicators of future needs are in some cases already available. Some of these emanate from so-called “megatrends” – such as demographic changes, the increasing individualization of society, and sustainability – whilst others come from specific requests for new adhesives and raw materials that are not currently available.

The Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM has carried out research and development in adhesive bonding technology for decades. These R&D activities have ranged from molecular level studies to finished bonded products and mean that Fraunhofer IFAM has extensive knowledge of new potential areas of application.

### Technical trend analysis and technology roadmaps

The adhesive industry, like other industries, is also influenced by global trends and social developments. The above-mentioned megatrends can influence the adhesives that are required in the future. For example, there is a growing need for disposable packaging, medical products, and hybrid joining techniques for lightweight structures.



The Fraunhofer IFAM advises and supports companies by analyzing carefully these trends and matching them to the technological as well as commercial capabilities of raw material and adhesive manufacturers for timely strategic orientation on specific technology roadmaps.

## Concepts for technical marketing

Each organization has a certain idea about how they would like to appear to the outside world. But: Is this the image actually perceived by their – potential – customers? This is important because it directly influences the prominence and acceptance of the company's products in the market.

The Fraunhofer IFAM has already successfully analyzed the image of adhesive and raw material manufacturers as perceived by their different customers and developed concepts for optimization. This approach leads to technical marketing measures such as a greater focus on certain application areas, the preparation of different sample formulations, and changes to service models.

It must also be determined whether the company's product portfolio has adequate future focus and what existing areas deserve expansion. This may result in recommendations to buy companies or families of patents respectively to the preparation

of studies for investors. Fraunhofer IFAM can also provide advice on these matters.

## New application areas for raw materials

There is invariably a lack of information available to raw material manufacturers about what raw materials will be required in the future to serve the end-customer markets that are several steps up the value creation chain. Experts at the Fraunhofer IFAM are able to provide valuable advice here based on their in-depth experience of the entire value creation chain for adhesive bonding. This involves, on the one hand, studying future trends in adhesive bonding technology and deriving what raw materials will be required. On the other hand, it involves carrying out studies on how raw materials can be modified to allow improved productivity and product performance for current applications.

Many of today's raw materials were originally developed for specific applications. Of particular interest is to determine if they can be used to add value to adhesives and, if so, how market introduction can be realized. In order to be able to address such issues, the Fraunhofer IFAM, often first of all, undertakes theoretical studies, prepares sample formulations, and helps companies prepare technical marketing literature.