

Natural Fillers in Composite Systems

At present, it is necessary to reflect the relationship to the environment more and more. Even in the field of material engineering, it is possible to work with environmentally sensitive materials. These are, for example, polymeric composites with a filler based on natural materials/fillers. However, natural materials have different properties and it is therefore necessary to use the experimental description for to define application areas. The lecture describes the chemical treatment of fillers, which leads to the optimization of interfacial interactions and describes the mechanical changes that occur in natural materials after this process. An important property of, for example, natural fibers, is their porosity, which have to also be defined because it is directly correlated with the resulting mechanical properties of the fiber. It is further necessary to optimize the composites production process, where vacuum methods are described for this purpose. Theoretical assumptions are supported by image analysis on an electron microscope.