

Thermosetting plastics

Optical sensors for machine construction

Overheating and a mechanical overloading of moving machine parts are often invisible before a serious damage occurs. Therefore, large production lines have to be switched off and checked from time to time in order to become aware of beginning damages. Thermochromic polymers as optical sensors could solve this problem. Integrated in the moving machine parts they can indicate changes of the regular production conditions during the operation by changing their color e.g. from green to red. After eliminating the malfunction the color returns to the starting color – in our example to green. The developed thermochromic pigments can be used in coatings or incorporated into machine parts consisting of thermosetting plastics.



Figure 1
Thermochromic thermosetting plastic possessing a reversible switching between green and colorless.