



Figure 6.2.6: Illustration of Automatically Sorting

In recent last years, automatic sorting processes have been developed, where not only the analysis of the parts by optical or spectroscopic procedures is done, but also the separation of single parts from a conveyor belt can be done (see figure 6.2.6). The new automatic sorting processes use different analyzes or the different color of the parts by identifying different materials, leading to a very good separation of two or three different fractions. In one technology the different materials are blown with air to the one or other direction according to the analysis. With the development of high speed computers even single particles with a diameter of some millimeters can be separated.

Sampling of Complex Material For high-grade electronic scrap not only mechanical separation is important but also sampling. In contrast to normal copper scrap, where estimation of the copper content is the common method for analyzing the copper content in the scrap, printed circuit boards may contain not only copper but also high amounts of precious metals. For example, a high value printed circuit board from a computer may contain up to 400 g/t of gold, representing a value in the range of 15,000 USD, whereas pure copper has a value in the range of 10,000 USD. So the value of the gold content may be higher than the value of pure copper. Therefore, sampling by grinding and dividing the sample is a very important and difficult procedure, requiring sophisticated procedures and experience. Sampling costs are therefore for