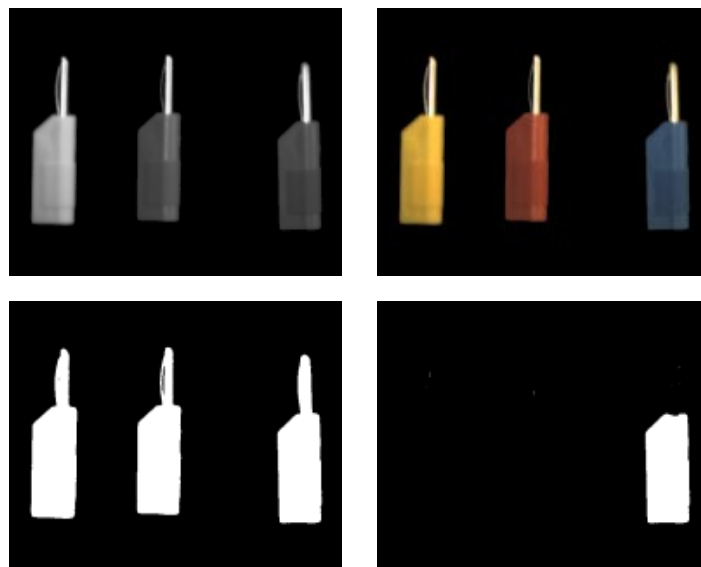


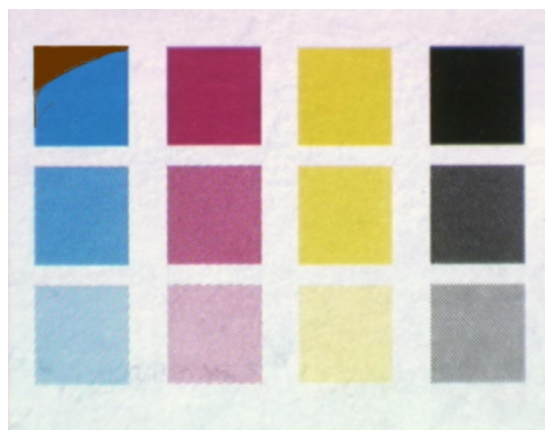
# mvIMPACT Color

Color imaging is specially attractive due to the increased richness of information at the pixel level. Multiple channels of light intensity at different wavelengths create more opportunities to exploit the contrast between objects. Color analysis allows classifying features impossible to discriminate on a gray-scale image.

In the standard RGB representation, color components are strongly correlated. Other color systems have been designed to take advantage of this redundancy, so that the true color of surfaces can be determined irrespective of the illumination conditions. This leads to more robust ways to identify areas of interest.



**Thresholding in the color space**



**Color proofing**

The additional possibilities offered by color imaging must be supported by appropriate mechanisms to ensure color stability, to switch between colorimetric systems and turn color scales to gray values for further processing using standard techniques.

## **Main features**

### **Alternative color spaces**

The Color module supports conversions between a number of standards, among which: B&W, CMY, RGB mainly used for display purposes, YUV, YIQ, YCC from the broadcast industry, HLS, HSV for de-correlation and XYZ variants for device independent representation.

### **Color fidelity**

Arbitrary linear transforms can be applied to color components. This allows, among others, implementing color calibration by comparison to reference color samples.

### **Quantitative color description**

Perception of color is an essentially subjective characteristic of the human eye. Color systems such as HLS allow expressing colors by means of intuitive parameters such as intensity, purity and tint. The CIE XYZ is a universally accepted standard to describe colors in a portable way, not relying on a particular imaging device.

### **Color segmentation**

Robust binarization of images, i.e. telling object from background pixels, can be achieved in the color space. By combining acceptance ranges for the color components with suitable color space transforms, innumerable segmentation problems can be addressed.