

## Special Issue Introduction

# Perception of color and material in complex scenes

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After decades of research we have a good understanding of how observers perceive the color and lightness of surfaces in Mondrian configurations consisting of coplanar matte surfaces rendered under diffuse illumination. However, the objects we look at in daily viewing, are rarely flat, matte or coplanar. They can be rough as well as smooth, glossy as well as matte. Typically, they are distributed throughout scenes at many different orientations and depths. Scene lighting is rarely diffuse and often varies dramatically with direction or location.

There is now considerable interest in examining how human observers perceive surface properties, including color, in realistic three-dimensional scenes. This interest is spurred in part by advances in computer graphics that allow physically accurate rendering of a variety of materials and thus permit exploration of the effect of variables such as object shape, orientation, material, and spectral reflectance as well as illumination geometry and spectrum.

This special issue brings together papers that describe recent advances and focuses on progress since the publication of a similar feature in *Journal of Vision* in 2004 <http://www.journalofvision.org/content/4/9.toc>.