



## Jonas Ferdinand Gabriel Lippman

1845-1921

Gabriel Lippmann, a Franco-Luxembourgish physicist, inventor, and Nobel laureate, was a pioneer in color photography and 3D displays in the early 20th century. Lippmann developed a method to create a "true color" image, later known as a Lippmann Plate, using a black and white photographic process. Lippmann's process created stationary waves in a light-sensitive film, thereby exposing the emulsion in diffraction patterns. The resulting image, viewed in the reflection of a diffuse light source from the plate, would exhibit very similar colors to the original scene thanks to constructive interference. This process of reproducing colors photographically based on the phenomenon of interference earned Lippmann the Nobel Prize in Physics for 1908. In that same year, Lippmann proposed the concept of Integral Imaging, which would allow for the display of a three dimensional image without requiring special glasses on the part of the viewer. Lippmann suggested the use of a series of lenses placed at a picture surface to create a true 3D image. While utilization of this concept today is found most largely in the related field of lenticular printing, research and commercialization of Integral Imaging methods remains very active more than a century after Lippmann first proposed the concept.