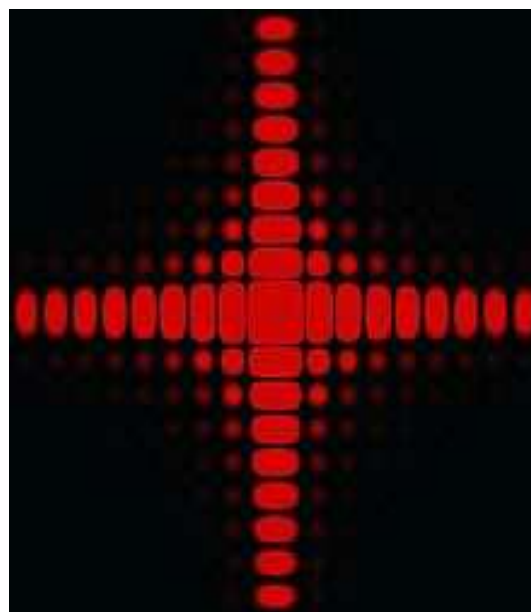


EXAMEN : Baccalauréat général - Série S-SVT ou S-SI	Session 2013
ÉPREUVE : Evaluation spécifique de Langue en section européenne	
<b>PHYSIQUE-CHIMIE en langue ANGLAISE</b>	
Thème : « Ondes et matière »	<b>Sujet n°14</b>

The effects of diffraction are often seen in everyday life. The most striking examples of diffraction are those involving light; for example, the closely spaced tracks on a CD or DVD act as a diffraction grating to form the familiar rainbow pattern seen when looking at a disk. This principle can be extended to engineer a grating with a structure such that it will produce any diffraction pattern desired; the hologram on a credit card is an example. Diffraction in the atmosphere by small particles can cause a bright ring to be visible around a bright light source like the sun or the moon. The speckle pattern which is observed when laser light falls on an optically rough surface is also a diffraction phenomenon. All these effects are a consequence of the fact that light propagates as a wave.



Diffraction can occur with any kind of wave. Ocean waves diffract around jetties and other obstacles. Sound waves can diffract around objects, which is why one can still hear someone calling even when hiding behind a tree. Diffraction can also be a concern in some technical applications; it sets a fundamental limit to the resolution of a camera, telescope, or microscope.

<http://en.wikipedia.org/wiki/Diffraction>

*grating : pattern or grid*

*speckle : small spots pattern*

### Questions

**1a :** Present and comment on the document.

**1b :** Do you think that diffraction can occur with any kind of wave ?

**2 :** Do you know other optical phenomena that could be explained by other properties of light ?