

## Optical manipulation of colloids and defect structures in anisotropic liquid crystal fluids

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## REVIEW ARTICLE

# Optical manipulation of colloids and defect structures in anisotropic liquid crystal fluids

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colloids

optical trapping

liquid crystals

defects

optical tweezers

optical vortices

optical lattices

optical traps

optical tweezers

optical traps

optical tweezers

optical traps

## 1. Introduction

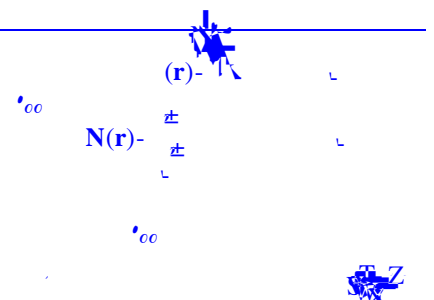
Optical trapping of particles is a well-established technique for studying the mechanical properties of individual molecules and cells [1]. The optical trapping of particles in anisotropic liquid crystal (LC) fluids has been used to study the mechanical properties of individual molecules and cells [2].

In this review, we discuss the optical manipulation of colloids and defect structures in anisotropic LC fluids. We first review the basic principles of optical trapping and the properties of anisotropic LC fluids. We then discuss the optical manipulation of colloids and defect structures in anisotropic LC fluids.

The optical manipulation of colloids in anisotropic LC fluids has been used to study the mechanical properties of individual molecules and cells [2]. The optical manipulation of defect structures in anisotropic LC fluids has been used to study the mechanical properties of individual molecules and cells [3].

The optical manipulation of colloids and defect structures in anisotropic LC fluids has been used to study the mechanical properties of individual molecules and cells [4]. The optical manipulation of defect structures in anisotropic LC fluids has been used to study the mechanical properties of individual molecules and cells [5].

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The optical manipulation of colloids and defect structures in anisotropic LC fluids has been used to study the mechanical properties of individual molecules and cells [8]. The optical manipulation of defect structures in anisotropic LC fluids has been used to study the mechanical properties of individual molecules and cells [9].

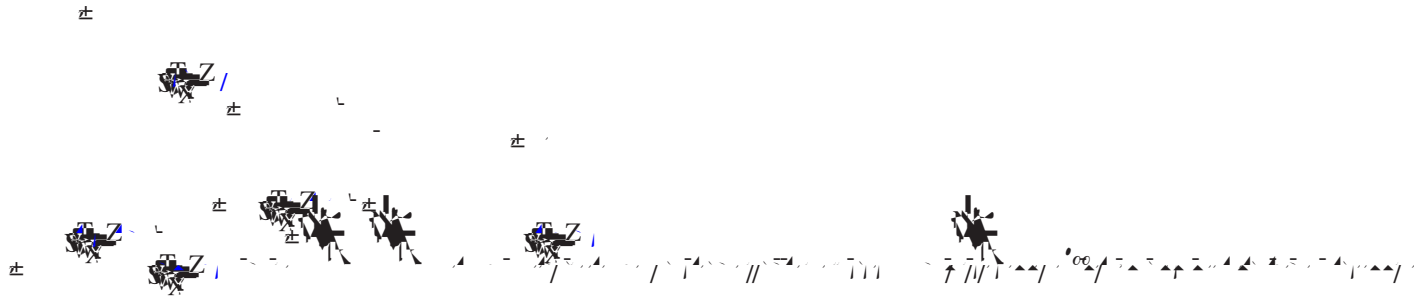




Table 1.

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Figure 1

The diagram illustrates the optical path of a laser-based transmission system. A laser source on the right emits a beam that passes through a lens and a fiber optic cable. The beam is then directed through a series of lenses and mirrors to illuminate a target area. The diagram is rendered in a color gradient from red at the top to blue at the bottom.



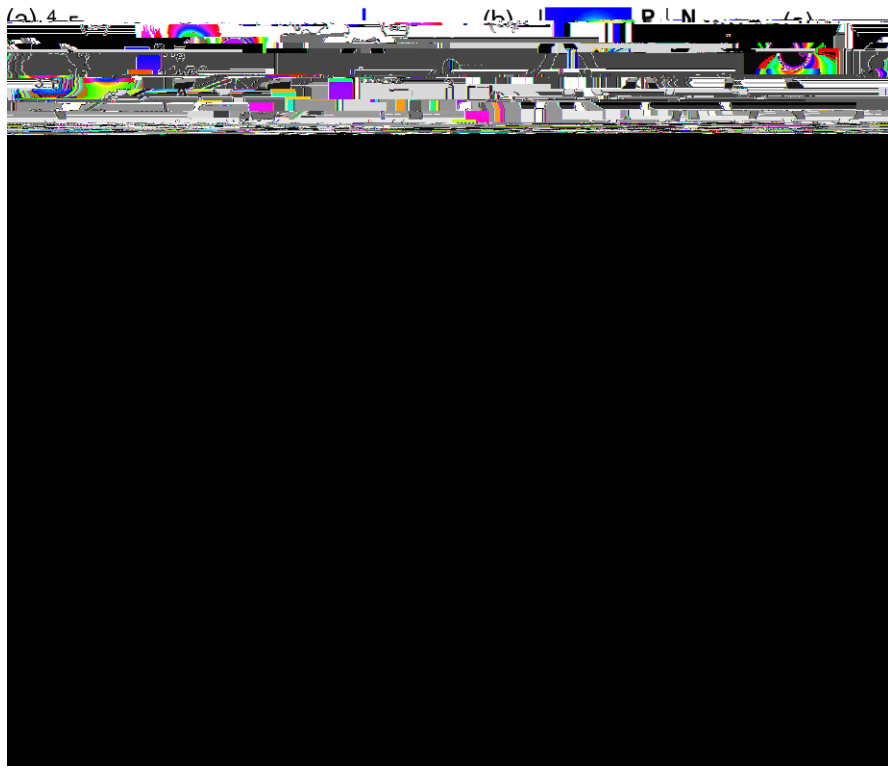


Figure 3. [Illegible text]

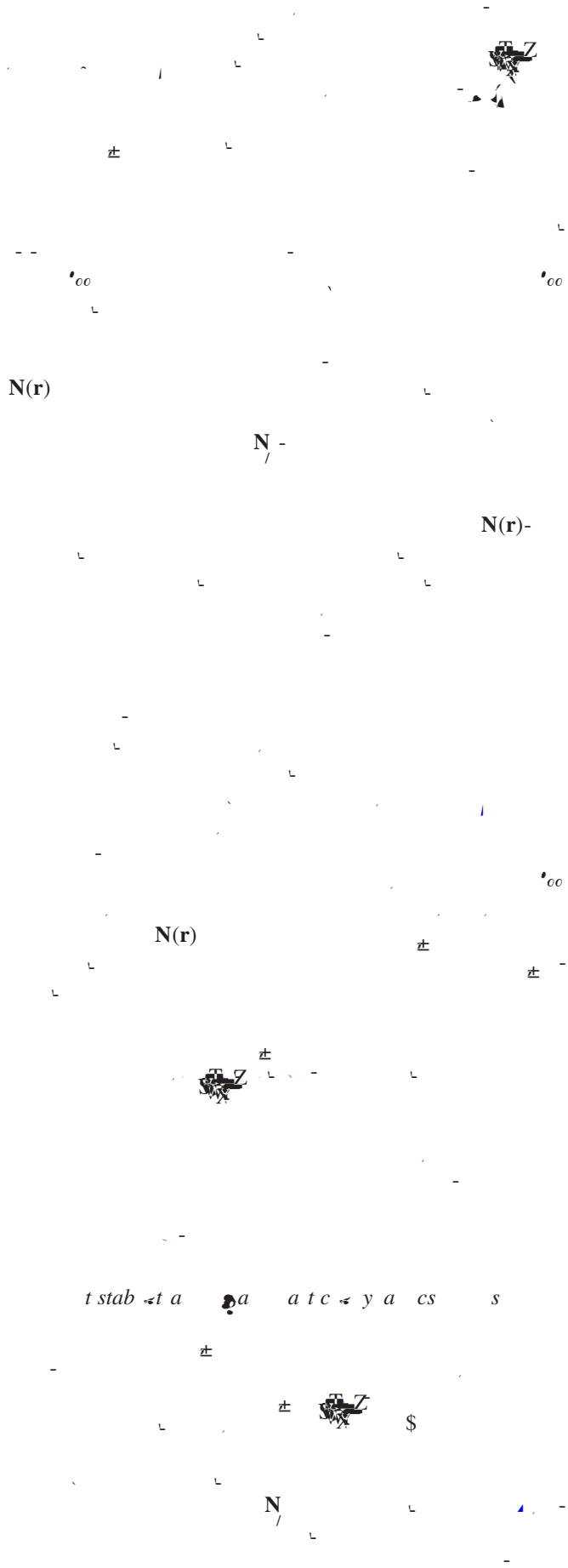


Figure 4.

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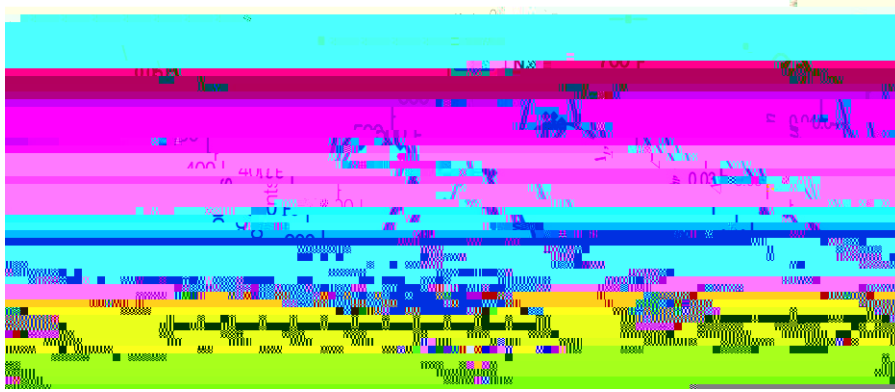


Figure 5.

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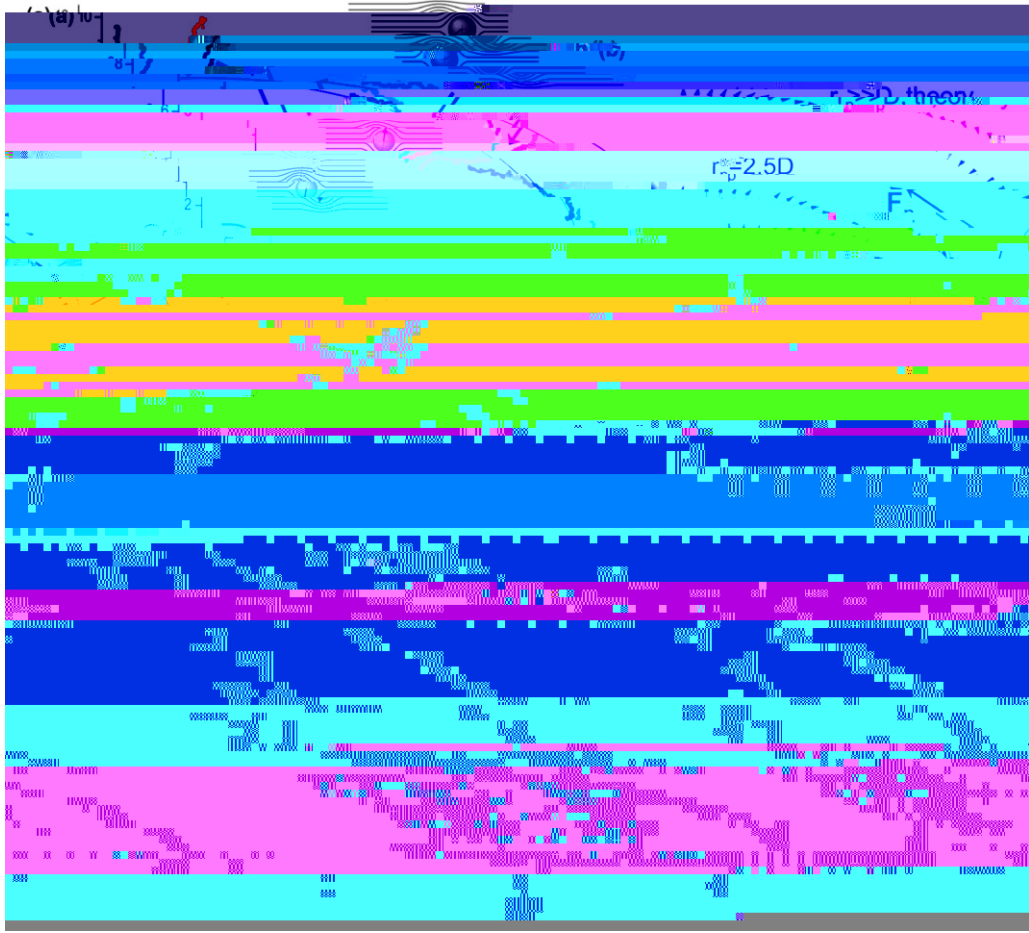
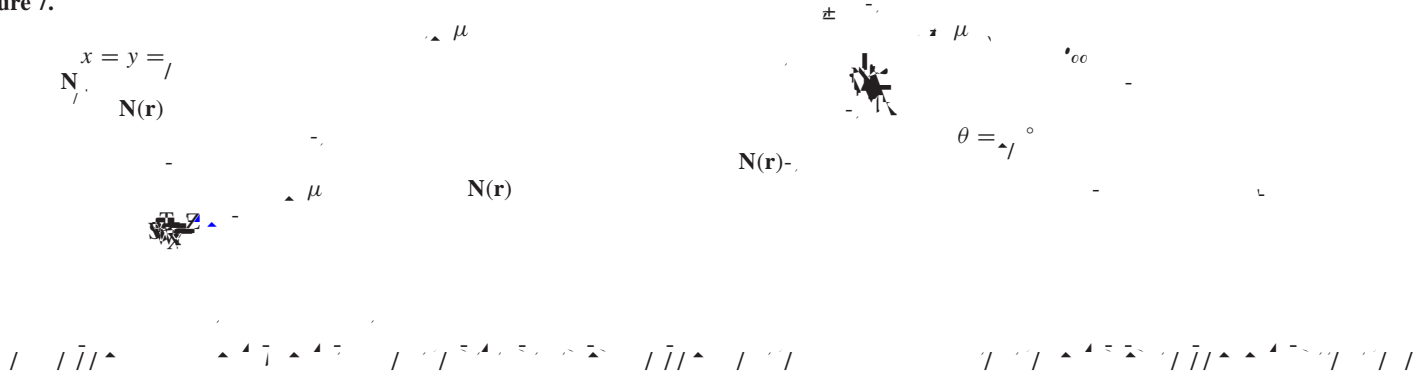


Figure 7.



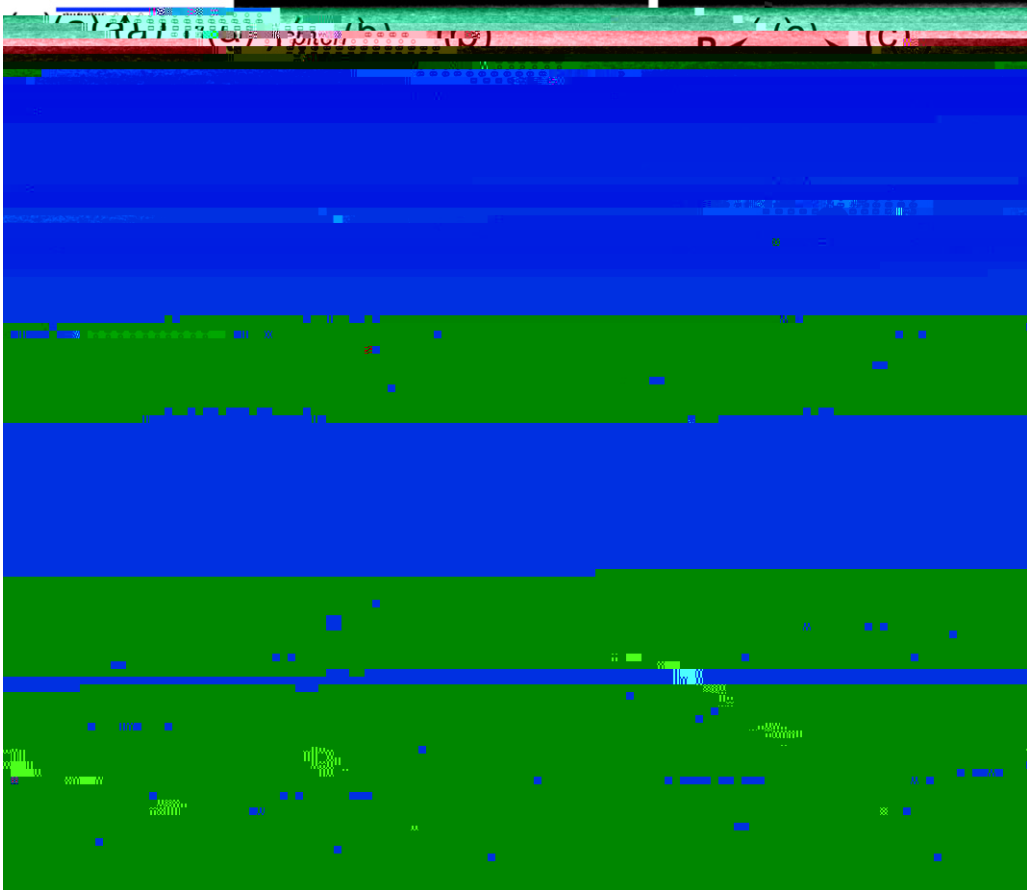


Figure 8.

Figure 9.

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 \end{aligned}$$



Figure 10.  
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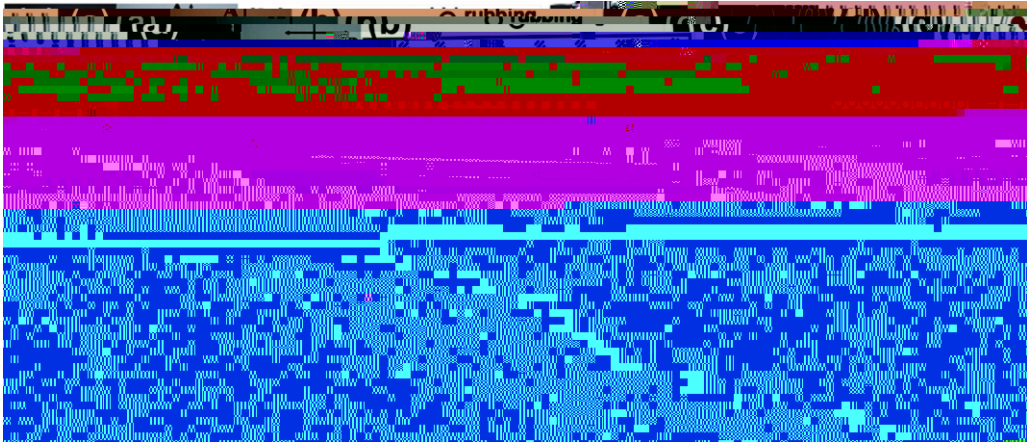


Figure 11.



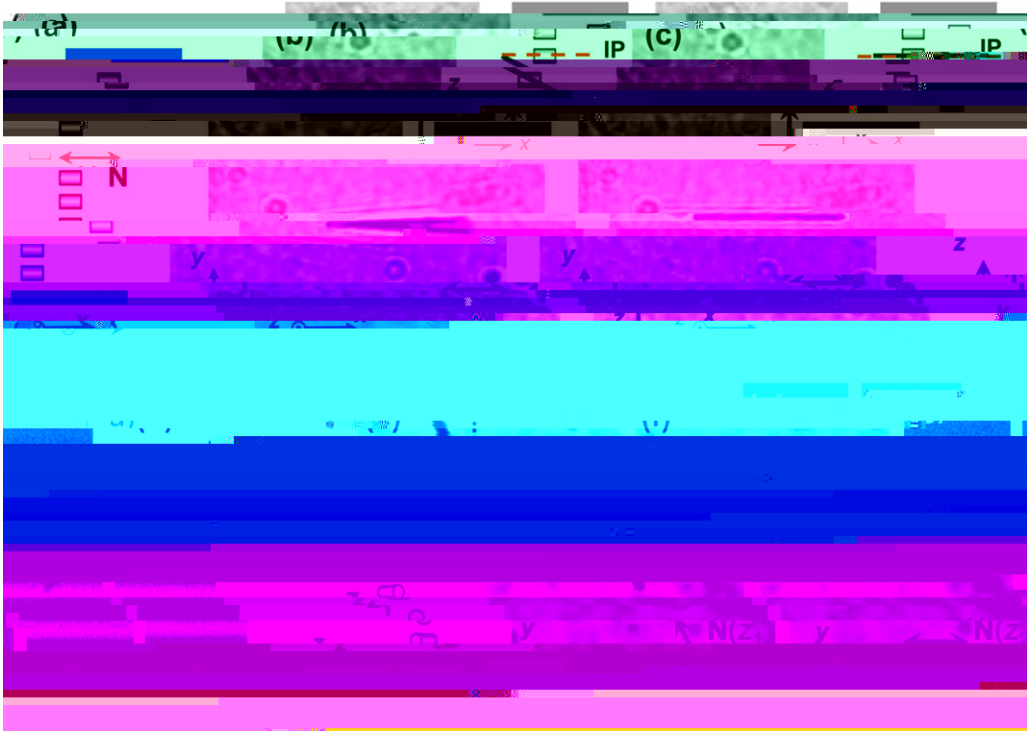


Figure 12



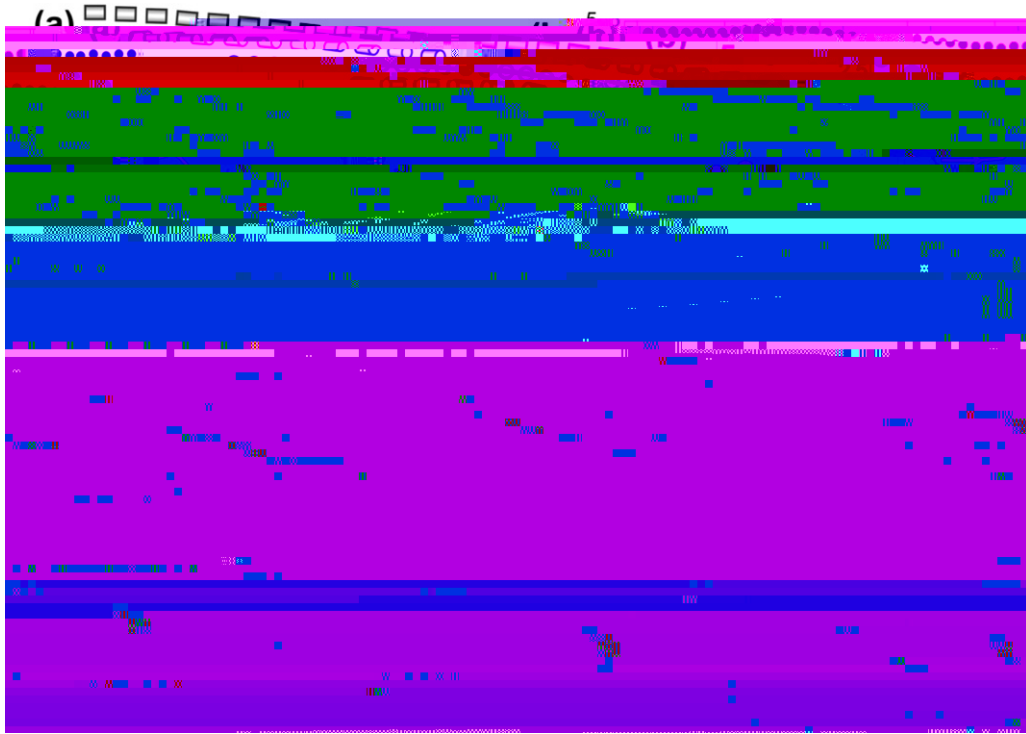


Figure 13.



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