



Dispersion and orientation of single-walled carbon nanotubes in a chromonic liquid crystal

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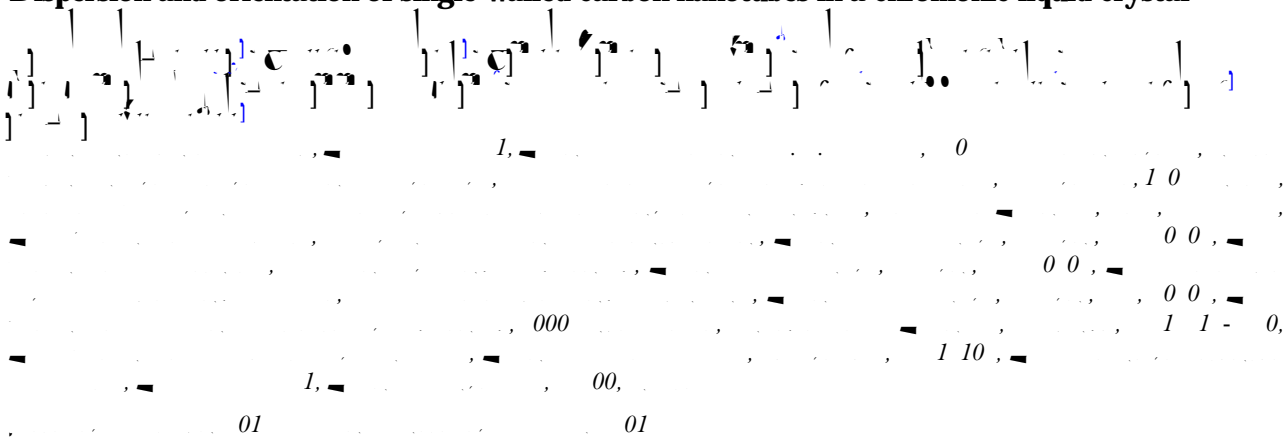
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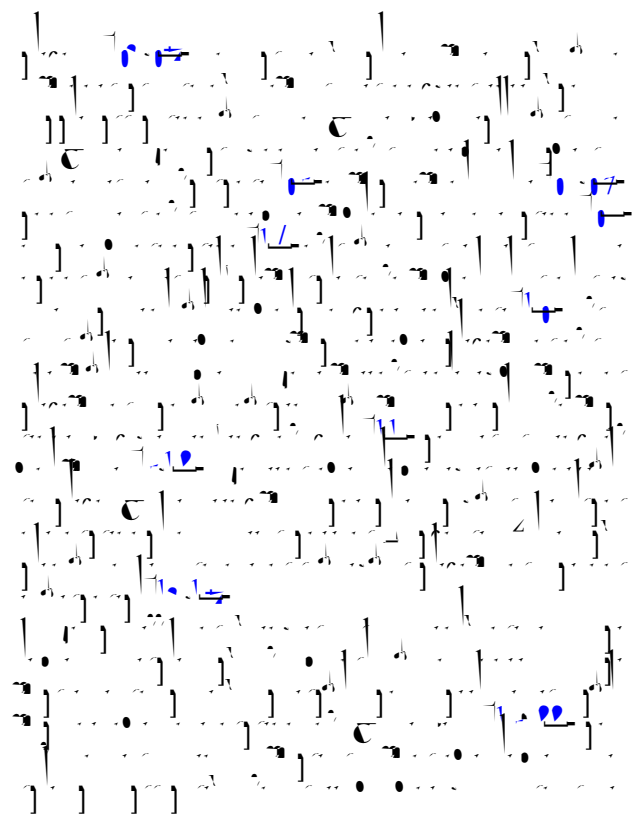
Dispersion and orientation of single-walled carbon nanotubes in a cholesteric liquid crystal



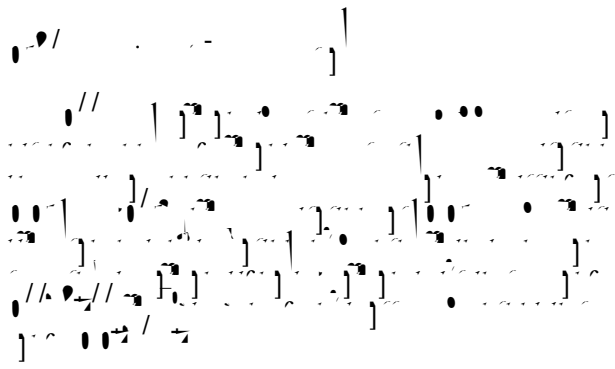
Keywords:

1. Introduction

The dispersion and orientation of single-walled carbon nanotubes (SWCNTs) in a cholesteric liquid crystal (CLC) is a topic of great interest in the field of liquid crystal nanotechnology. The unique properties of SWCNTs, such as their high aspect ratio and excellent mechanical and electrical properties, make them ideal candidates for use in a wide range of applications, including sensors, actuators, and displays. The cholesteric phase of a liquid crystal is characterized by a periodic arrangement of layers of molecules, which can be used to align and orient the nanotubes. This alignment and orientation can be controlled by the application of an electric field, which can induce a reorientation of the nanotubes and the liquid crystal molecules. The resulting structure can be used to create a variety of devices, including sensors, actuators, and displays. The present work focuses on the dispersion and orientation of SWCNTs in a CLC, and the effect of the electric field on the resulting structure. The results show that the nanotubes are dispersed and oriented in a regular pattern, and that the electric field can be used to control the orientation of the nanotubes and the liquid crystal molecules. The results also show that the nanotubes are aligned and oriented in a regular pattern, and that the electric field can be used to control the orientation of the nanotubes and the liquid crystal molecules.

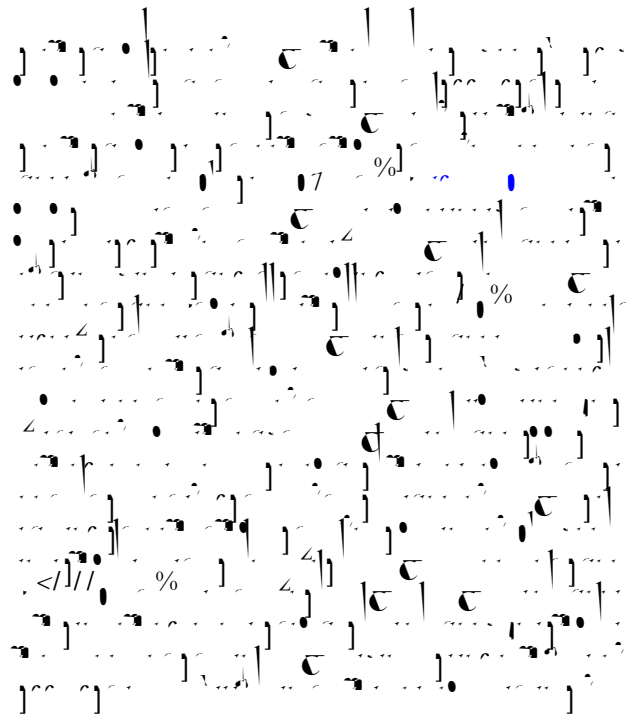
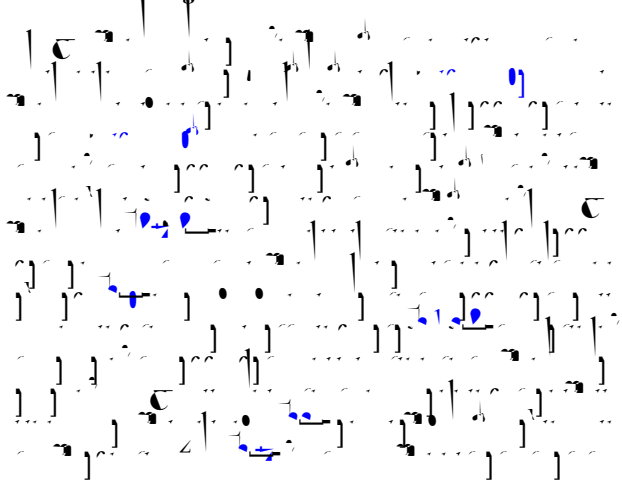


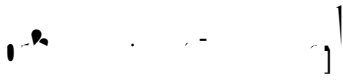
A handwritten musical score consisting of five staves. The notation includes various note values, stems, and beams. The first staff begins with a treble clef and a key signature of one flat. The second staff contains two blue markings. The fourth staff features a double bar line and a percentage symbol (%). The fifth staff ends with a double bar line and a final note.



3. Results and discussion

3.1 Phase diagram





References

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100