

ULTRAHIGH MAGNETIC FIELD OPTICAL STUDY OF SINGLE-WALLED CARBON NANOTUBES FILM

Title	ULTRAHIGH MAGNETIC FIELD OPTICAL STUDY OF SINGLE-WALLED CARBON NANOTUBES FILM
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Abstract	<p>Excitons in Single-Walled Carbon Nanotubes (SWNTs) have emerged as an ideal candidate for exploring one-dimensional (1-D) exciton physics. Exciton states which dominate optical properties of SWNTs even at room temperature, are not clarify yet. The optical absorption spectra of aligned SWNTs films under ultra high magnetic fields up to 190 T are examined to investigate this issue. Shifting and splitting of the absorption peaks due to Aharonov-Bohm effect was observed clearly above 80 T in the configuration where the magnetic fields were applied in parallel to the alignment of SWNTs. The lowest singlet exciton state has been determined through the analysis of energy splitting of excitons by the application of magnetic fields. <i>Keywords:</i> blue shift, optically active, optically inactive, red shift, single-turn coil system</p>
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