★★★ ＜第36回知的財産翻訳検定試験【第19回和文英訳】＞ ★★★
≪１級課題 -化学-≫

【問 1】
[0003]

In recent years, in the production process of liquid crystal display panels, a peel-off electrification voltage generated when a surface protection film laminated over an optical film is peeled off and removed damages circuit components such as driver ICs for controlling display screens of the liquid crystal display panels, and also causes disordering of the orientation of the liquid crystal molecules of the panels, although the number of occurrences is small.

In addition, in order to reduce the power consumption of liquid crystal display panels, the drive voltage of liquid crystal materials has been lowered, and the breakdown voltage of driver ICs has also been lowered accordingly. Recently, it has been required that the peeling electrification voltage be in the range of +0.7 kV to -0.7 kV.

Therefore, in order to prevent defects caused by a high peeling electrification voltage generated when a surface protective film is peeled off from an optical film, which is an adherend, proposed is a surface protection film formed by using an adhesive layer containing an antistatic agent for suppressing the generated peeling electrification voltage to a low level.

【問 2】
Contrary to such conventional general knowledge in the art, the inventors of the present invention have focused on the fact that the magnetic phase transition itself is a unique physical property reflecting the crystal structure and composition of the magnetic phase in the material, and have conceived of using the measured values of the magnetic phase transition as an index that reflects the "structure", such as crystal structure and composition (structure data), rather than as an index to determine the superiority or inferiority of the "property" of the material (property data). As will be described later, the acquisition of information on "magnetic phase transitions", that is, the acquisition of "feature values based on the magnetization temperature dependence" is less subject to fluctuations in data quality due to the

individual skill of the data collector, and the data can also be obtained mechanically. By using such measured values as feature values of "structure", it is anticipated that the construction of mathematical models that could not be constructed from conventional databases will become possible, advancing material development through materials informatics.

【問 3】

[0059]

[Storage stability]

The ink composition that had been passed through a membrane filter with a pore diameter of 10 μm was filled in a sample bottle and left at 60°C for one week.

Then, the ink composition stored in the sample bottle was passed through a metal filter with a pore diameter of 10 μm (area: 0.8 mm^2, thickness: 10 μm), and evaluated for its storage stability according to the occurrence of foreign matter. The evaluation criteria are shown below.

[0060]

[Intermittent characteristics]

An ink cartridge was filled with the ink composition obtained above and installed in an inkjet printer (manufactured by Company S). Then, by using a printer driver, the ink composition was filled into a printer head, and it was confirmed that there were no clogged nozzles and that normal recording was possible.

[0061]

After driving a carriage for 5.0 seconds without ejection of ink, ink droplets were ejected onto an intermediate transfer medium (manufactured by Company C). The operating environment of the printer was 23°C and 50 RH%. The number of misfiring nozzles was counted, and the intermittent characteristics were evaluated based on the following evaluation criteria.

【問 4】

Claims

1. A substrate-responsive membrane material, comprising:

a polymer compound comprising a carboxyl group-containing

poly(meth)acrylamide, and/or an ester group-containing poly(meth)acrylamide wherein at least a portion of the carboxyl group is ester-bonded to a hydroxyl group of cyclodextrin, and

a biologically functional substance that undergoes a redox reaction to oxidize and reduce the substrate.

8. The substrate-responsive membrane material according to claim 1, wherein the substrate-responsive membrane material is formed into a membrane shape with a membrane composition comprising said polymer compound, said biologically functional substance, and a medium, and has pores formed by removing the medium from the membrane composition.

10. A non-aqueous redox biosensor comprising:

a working electrode coated with a substrate-responsive membrane wherein the substrate-responsive membrane is formed into a membrane shape on an electrode substrate with the non-aqueous redox reaction field-forming material according to claim 9, and wherein the substrate-responsive membrane fixes said biologically functional substance and exposes said biologically functional substance together with said polymeric compound, and

a reference electrode.

16. A method for measuring substrate concentration, comprising:

coating a working electrode by forming a membrane on an electrode substrate with the non-aqueous redox reaction field-forming material according to claim 3,

immersing the working electrode and a reference electrode in a non-aqueous solution containing a substrate to be oxidized and reduced, and an organic solvent, and

measuring the redox potential.