Study of phosphor using electronic conductive yarn for clothing

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1. INTRODUCTION

Smart wear provided comfortable service such as bio-sensors, display, computer systems to users. The developed content for smart wear was becoming accelerated to application. The smart wear which was developed 21st century, but it has some technical problem for interconnecting between power supply and clothing. But there are a lot of problems on this research still exist. Smart wear is composed to interconnecting exchanging information at platform, and IT device in a human body. Development of a platform-type wear is consisting actively by miniaturization of a recent IT device.

The fusion of a platform and IT device is necessary basic research technical of interconnecting fiber for information delivery of smart wear. Interconnecting Technical study is give a datasheet for problem solving to be basic of smart wear.

In this study, understand an interconnecting principle for fusion which is applied between electric platform and conductive fabrics for smart fabric. And we also studied analyze problems on electric platform.

2. EXPERIMENTAL

An interconnecting device shall be having an electric characteristic to be low in order to exchange information at clothes. Sample shall have an electric characteristic, and a mechanical characteristic of fiber shall have it at the same time. Also, fusion need easy with metal for connection with an IT device. Therefore, sample is an Ag coating of a electroless plating method of metal to Nylon fiber, and connected a Ni metal connector.

We used multi-meter (HIOKI, Digtal Hitrster 3803), LCR meters (WATNE KERR, 4265) in order to recognize a resistance of connecter. Also, This study compared a change of resistance and connector access after 5%, 10%, 15%(Tinius Olsen Ltd, H5KT-0236) tensile strain. FE-SEM (S-4200) devices used to observe the connector stability on morphological structure with external stimulus.

We applied the tensile strain 5%, 10% and 15% on electronic conductive fibers and then connect the IT devices (luminous element) after fiber and a connector to have been connected for interconnecting, and analysis did a luminance difference.

3. RESULTS AND DISCUSIION

Resistance price increased, and the results that luminance became lower were derived according to unique resistance increase in luminous body connection in fiber and connector connection parts. I appeared in experiment to have obeyed in 5%, 10%, 20% (Tinius Olsen Ltd, H5KT-0236) as I was proportional to tensile deformation transformation so that resistance of a connection part increased.

I appeared that as a result of having analyzed the surface, have electric characteristics to fiber and a

connector as I used a FE-SEM (S-4200) device so that a part of an Ag coating plane equivalent was damaged by connector connection and ultimatetensile deformation transformation.. Therefore, I inserted anger glue defiant Ag on a fiber/metal connector part, and execution did a secondary test in the same day ways in order to recompense fiber Ag coating the surface damage along seal transformation. A resistance more than methods of a fiber/metal connector did decrease, but the data wasn't fix.

4. CONCLUSION

We recompensed damage of the Ag coating plane that I used anger glue defiant Ag, and occurred in case of 5%, 10%, 15%, physical tensile deformation transformation in connection of fiber and Ni metal connector, and I gave, and derivation did results price called unique resistance decrease. But as I use conductive glue, I am judged so that a problem occurs, and a design way to have become a little more electrically embodiment in order to have stability for clothes.

5. REFERENCES

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