Dear Reviewer 1

**JoVE59376**

“Accumulation and Analysis Methods of Copper Ion in Copper Sulfate Plating Solution”

Toshiaki Koga, Yoshitaro Sakata, and Nao Terasaki

We thank reviewer for careful reading our manuscript and for giving useful comments. We appreciate that you are interested in our report. We have revised the manuscript JoVE59376 on the base of the reviewer comments.

We look forward to a publication of our manuscript in Journal of Visualized Experiments.

Sincerely

Toshiaki Koga

Our responses to the reviewew comments are as follows. The correction is described in red in the text.

1. In lines 62-63 it is preferred to add a figure or sketch and referred to show the Skeltonstructure of BCS-Cu(I).

**Reply:**

I changed Figure 3 to Figure 1 and added a guide to Figure 1.

(See Figure 1).

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1. in line 88, is it chlorine or chloride and is the source for this material?

**Reply:**

Yes, add hydrochloric acid so that the chlorine concentration becomes 1.41 mmol/L (1.4).

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3. line 136 instead of (minus) it is o preferred to use (negative).

**Reply:**

Fixed plus to positive, minus to negative.

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4. in line 118 and under it is prefer to point out to a figure of that jig for good presentation.

**Reply:**

A picture of the jig was added as Fig. 3 and an explanation was added in the sentence.

2.6. The jig consists of an acrylic beaker fixing part (Fig. 3 (1)) and metal electrode parts (Fig. 3 (2)). The electrode part consists of the parts to fix the plate and the part connect to the cord from the power supply.

2.7. Connect the electrode (anode) of the copper plate to the positive of the power supply (Fig. 3 (3)), and the electrode of the platinum plate (cathode) to the negative of the power supply (Fig. 3 (4)).

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5. is it true to insert the electrode in the solution before turning on the current? Why?

**Reply:**

If the plate is inserted with the stirrer rotating, there is a possibility that the plating solution may splash, and the beaker may light up. In order to avoid danger, load the jig beforehand and let the current flow.

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6. in line 208 , definition of symbols is required.

**Reply:**

I added the definition in the text.

t is the time from the start of measurement, A0 increases the value of a component that reacts instantaneously (absorbance at t = 0) and AL increases the value of a component that reacts slowly (At - A0). *TL* is the time constants of AL component.

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7. in line 266 what is meant by: a copper plate is attached to the anode and platinum is attached to the cathode?

**Reply:**

We think that the copper plate of the anode dissolves by electrolysis and promotes the accumulation of copper ions in the plating solution. The same result could be obtained by using a copper plate for the cathode. However, we chose platinum plates, as it is presumed that the plate does not change and the influence on the plating solution is small, and we can use the same plate repeatedly in different experiments.

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8. It is also needed to confirm the effect of Cu(I) on the shape of the deposit in accordance with the suggested its formed generation with time> I think it is preferred to add SEM s figure

**Reply:**

Thank you for your advice. I will use Figure 8.

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9. Conclusions are needed

**Reply:**

I added it to the discussion and described it in the red.