Plating NEWS 2023

IN THIS ISSUE:

Technical Points: Reprised

We occasionally get asked to reprise some of the pleasant technical nuances of optimizing electrolytic processes.

Cost implications of better plating is especially high on the list.

One of the first things this author learned about optimized plating is that the cost of anodes to adequately cover a given cathode decreases considerably. Averages of **18-24% anode cost reductions** were generally seen in plating installations where "overplating" to meet a minimum thickness specification was normal.

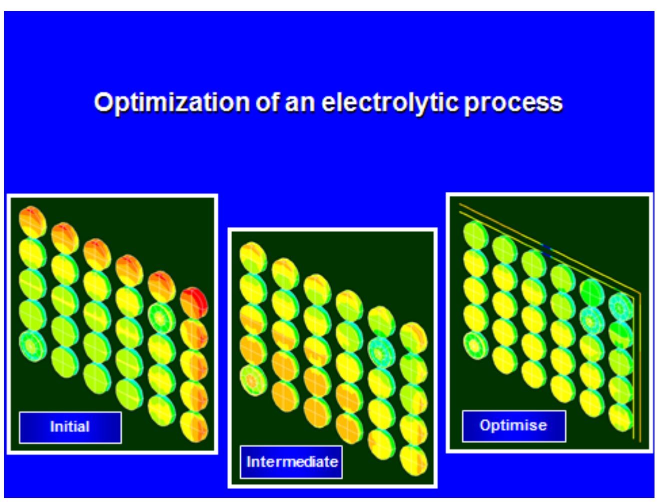
Although it's not common, or even necessary, to physically "weigh" the deposits of two different plated objects, it's possible to simulate the weight in a computer model: one from a conventional plating cell and the other from an optimized plating cell. Thus, it can be done on individual parts. The end-result will be less metal consumed overall and ultimately this is reflected in the bottom line.

Processing time is naturally reduced because it takes less plating time to cover an object with the minimum thickness required. There has been some speculation that waste treatment can be affected because the plating cycle time is reduced, thus more racks of parts are hitting the rinse tanks subsequent to plating. There's been no measurable evidence of this, but it could be something to consider. And note that the cycle time up to plating would be the same in any case, e.g. cleaning, rinses, acid dips etc.

Overall **plating capacity is increased** which ultimately leads to more parts out the door or more parts for the next manufacturing department to handle, inspect and pass along. It's not fantasy to know that a ripple effect, down the line as it were, can be very real.

Ancillary Improvements

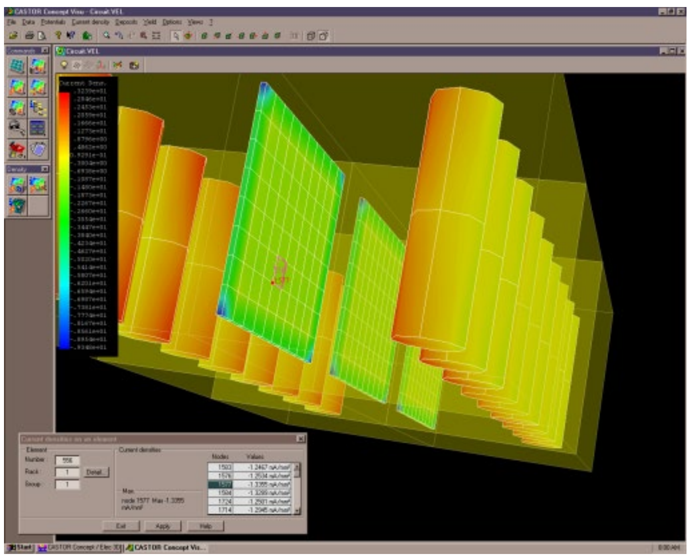
Computer models are fancy representations of what's actually happening in the plating cell. They produce results in colors. What we aim to achieve in the simulation models are the colors blending together, beginning with initial or "as-is" and concluding with optimized.



It's become a common theme around here when evaluating the success of plating and deposit thickness uniformity. When the colors come closer together there aren't so many extremes. The model thus becomes an excellent guide for the process engineer to take the next step.

Even more interesting, the color variants can be made to represent either current density or deposit thickness depending on how the simulation results are to be displayed. When the colors blend closer together the overall plated deposit thickness variation is smaller. The result is more uniform plating thickness distribution.

Just as important is understanding how, relatively speaking, the anodes function. There's been a lot written about the cathode but there's also an anode story of the story. We won't go into any more anode discussions unless asked. Let's just say, don't overlook the anodes. The graphic below depicts anode behavior in a flat panel plating installation….



IN A FUTURE ISSUE OF PLATING NEWS:

We were asked to comment on a previous Plating NEWS reference to plating optimization and its effect on **plating additive behavior**. Think high current density additives/low current density additives. Stay tuned!

THANKS FOR READING

This edition of Plating NEWS has been written and edited by Roger Mouton and guest staff at Advanced Plating Technologies. We welcome submissions for publication in future issues of Plating NEWS.

EIMC - Advanced Plating Technologies - www.smartcatshield.com

Your source for electrolytic process optimization**………..**

**** If you would like to add an associate or colleague to our distribution list please click on: info@smartcatshield.com and type the name and email address of that person in the text box.**

***** If you received this communication in error or you wish to be removed from our email Plating NEWS distribution list, click on info@smartcatshield.com and type REMOVE in the Subject box.**