

Accepted Manuscript

Title: Thin-Film UV–vis Spectroscopy as a Chemically-Sensitive Monitoring Tool for Copper Etching Bath

Authors: Alexander Lambert, Muthappan Asokan, Goutham Issac, Casey Love, Oliver Chyan



PII: S1226-086X(17)30109-0
DOI: <http://dx.doi.org/doi:10.1016/j.jiec.2017.03.004>
Reference: JIEC 3317

To appear in:

Received date: 2-12-2016
Revised date: 4-3-2017
Accepted date: 6-3-2017

Please cite this article as: Alexander Lambert, Muthappan Asokan, Goutham Issac, Casey Love, Oliver Chyan, Thin-Film UV–vis Spectroscopy as a Chemically-Sensitive Monitoring Tool for Copper Etching Bath, Journal of Industrial and Engineering Chemistry <http://dx.doi.org/10.1016/j.jiec.2017.03.004>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Thin-Film UV-Vis Spectroscopy as a Chemically-Sensitive Monitoring Tool for Copper Etching Bath

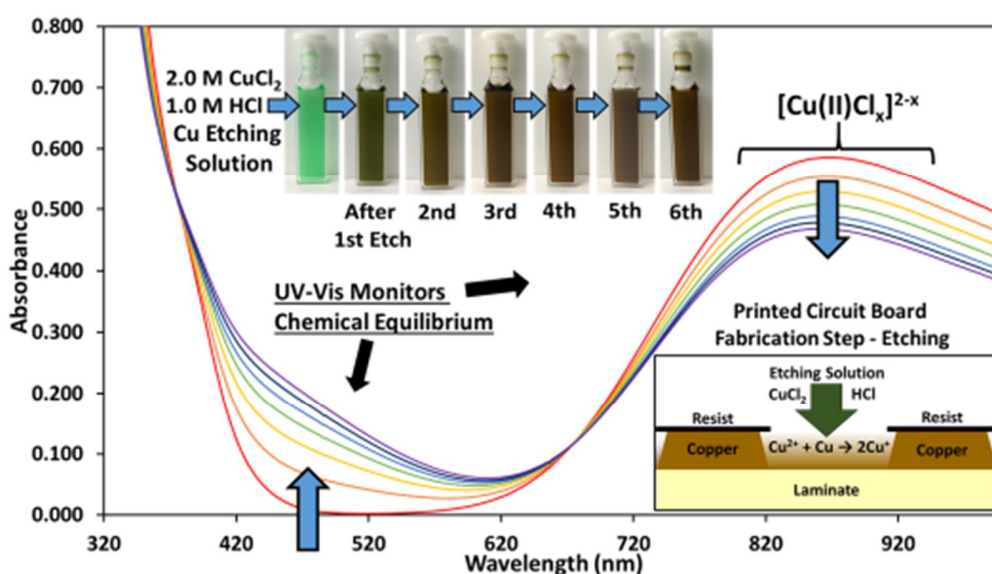
Alexander Lambert, Muthappan Asokan, Goutham Issac, Casey Love, Oliver Chyan*

Interfacial Electrochemistry and Materials Research Lab, Department of Chemistry, University of North Texas, Denton, Texas 76203, USA

Printed circuit board

Subtractive copper etching

Graphical abstract



Abstract

Subtractive copper etching is a central process in fabricating advanced printed circuit boards, where ever-shrinking features demand precise control of etch rate and etch factor. Copper etching baths, using cupric chloride, involve complex chemical equilibria that the currently used semi-chemical monitoring tools, including oxidation-reduction potential, conductivity, and specific gravity, can have difficulty controlling precisely. We report a new monitoring tool, thin-film UV-Vis spectroscopy, to support and enhance the existing monitoring parameters. UV-Vis can distinguish specific chemical contributions to the etch bath performance and to monitoring

Download English Version:

<https://daneshyari.com/en/article/6668176>

Download Persian Version:

<https://daneshyari.com/article/6668176>

[Daneshyari.com](https://daneshyari.com)