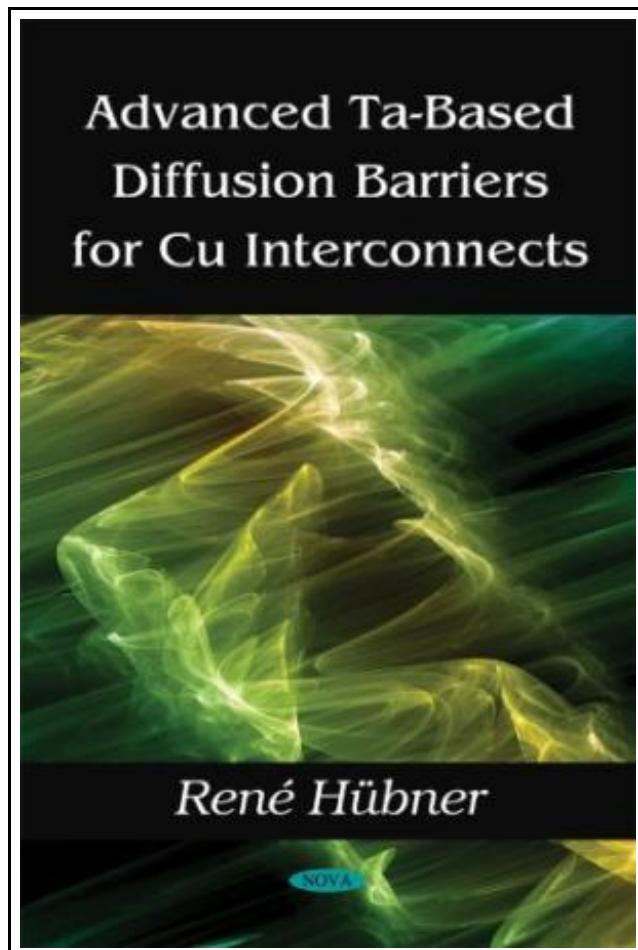


## Advanced Ta-Based Diffusion Barriers for Cu Interconnects



Filesize: 1.02 MB

### Reviews

*The publication is great and fantastic. It is packed with knowledge and wisdom You will like how the article writer publish this publication.*

*(Mrs. Alta Kling V)*

## ADVANCED TA-BASED DIFFUSION BARRIERS FOR CU INTERCONNECTS

[DOWNLOAD](#)

Nova Science Publishers Inc. Paperback. Book Condition: new. BRAND NEW, Advanced Ta-Based Diffusion Barriers for Cu Interconnects, Rene Hubner, During the last few years, copper has become the standard metallisation material for on-chip interconnects in high-performance microprocessors. Compared to the previously used aluminium, copper shows not only a lower resistivity, but also significantly improved electromigration resistance. Copper ions, however, are very mobile in silicon and many dielectric materials under electrical and thermal bias. Thus, barrier layers are needed to prevent Cu diffusion into the insulating layers surrounding the metallic interconnects. Since Ta-based compounds are characterized by a high thermal stability, pure Ta films or layer stacks consisting of Ta and TaN are used for such barriers. The continuous scaling down of the interconnect dimensions and, therefore, the essential decrease in the barrier layer thickness coupled with the replacement of silicon oxide by advanced low-k dielectrics demand further improvements of the diffusion barrier performance. It is the aim of this book to carry out microstructure and functional property investigations for advanced, high-performance Tabased diffusion barriers (Ta-Ta<sub>N</sub> layer stacks and Ta-Si-N single layers) before and after annealing to compare their thermal stabilities and to probe the corresponding failure mechanisms. For the Ta-Ta<sub>N</sub> barriers, these studies are undertaken for a range of layer sequences, while for the Ta-Si-N barriers a variety of films with different chemical compositions are analysed.

[Read Advanced Ta-Based Diffusion Barriers for Cu Interconnects Online](#)[Download PDF Advanced Ta-Based Diffusion Barriers for Cu Interconnects](#)

## See Also

---



### THE Key to My Children Series: Evan s Eyebrows Say Yes (Paperback)

AUTHORHOUSE, United States, 2006. Paperback. Book Condition: New. 274 x 216 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.THE KEY TO MY CHILDREN SERIES: EVAN S EYEBROWS SAY YES is about...

[Read PDF »](#)

---



### EU Law Directions (Paperback)

Oxford University Press, United Kingdom, 2014. Paperback. Book Condition: New. 4th ed.. 242 x 188 mm. Language: English . Brand New Book. With a readable and modern writing style, EU Law Directions clearly explains the...

[Read PDF »](#)

---



### The Preschool Inclusion Toolbox: How to Build and Lead a High-Quality Program (Paperback)

Brookes Publishing Co, United States, 2015. Paperback. Book Condition: New. 274 x 213 mm. Language: English . Brand New Book. Filled with tips, tools, and strategies, this book is the comprehensive, practical toolbox preschool administrators...

[Read PDF »](#)

---



### Peter Rabbit: Treehouse Rescue - Read it Yourself with Ladybird: Level 2

Penguin Books Ltd. Paperback. Book Condition: new. BRAND NEW, Peter Rabbit: Treehouse Rescue - Read it Yourself with Ladybird: Level 2, This is based on the new Peter Rabbit animated TV series. Peter and Lily....

[Read PDF »](#)

---



### Peppa Pig: School Bus Trip - Read it Yourself with Ladybird

Penguin Books Ltd. Paperback. Book Condition: new. BRAND NEW, Peppa Pig: School Bus Trip - Read it Yourself with Ladybird, Peppa and her friends are going on a school bus trip. What adventures will they...

[Read PDF »](#)