

**CD «World of Microsystems»
technical documentation**

How to prepare slideshows

A step by step guide

by Michel Berger (mib)

27.11.2003, mb

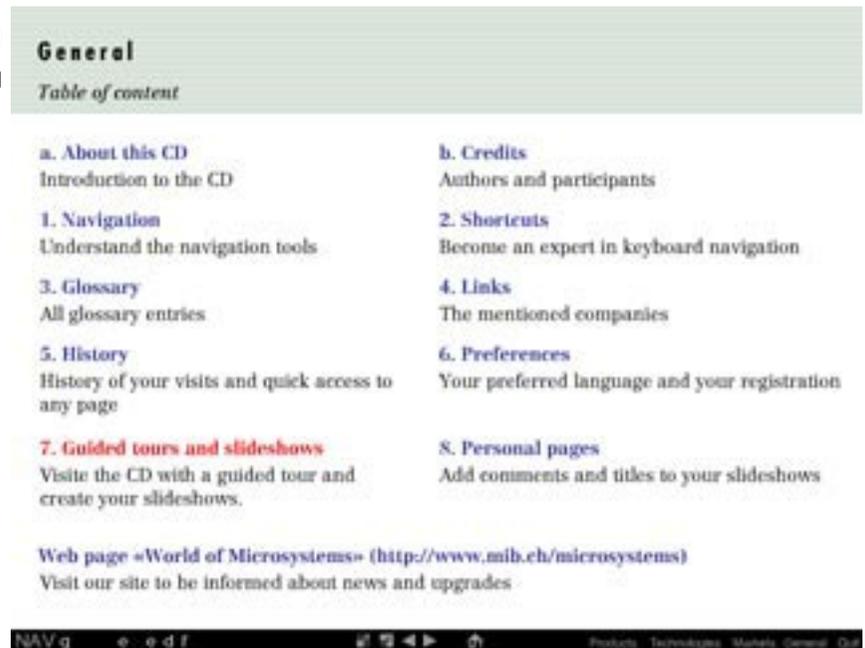
mib
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1



From the homepage select General

2



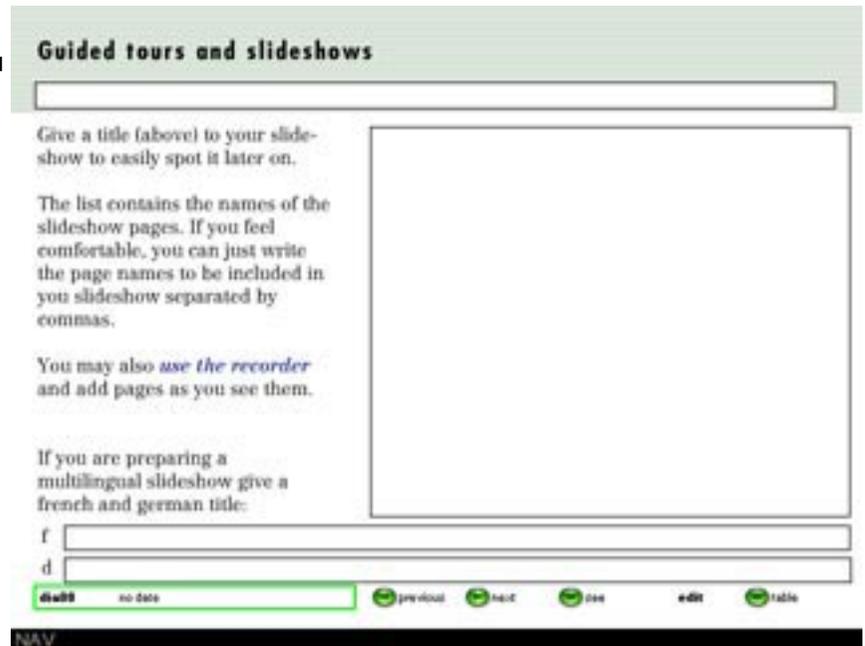
Select 7. Guided tours and slideshows

3



You see the list of slideshows. Those marked "no date" are empty. Choose for instance dia08.

4



This is the page with data for slideshow dia08

5

Guided tours and slideshows

my new slideshow

Give a title (above) to your slideshow to easily spot it later on.

The list contains the names of the slideshow pages. If you feel comfortable, you can just write the page names to be included in your slideshow separated by commas.

You may also *use the recorder* and add pages as you see them.

If you are preparing a multilingual slideshow give a french and german title:

f mon nouveau diaporama

d meine neue Diashow

dia99 no date [previous] [next] [use] [edit] [table]

It is recommended to give also a french and german title, otherwise you'll just see the creation date and no title when choosing german or french. If you prefer you could just duplicate the english title in the fields for french and german.

NAV

Give a title to your slideshow for instance «my new slideshow» in the top field. This title will appear in the table.

6

Guided tours and slideshows

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dia99 no date [previous] [next] [use] [edit] [table]

Now you could just enter the list of page identifiers in the large field on the right.

NAV

We show you how to use the recorder: Select "use the recorder"

7

Guided tours and slideshows

Table of slideshows

Select the slideshow you wish to edit or load.

You may:

- select a slideshow and load it to present it.
- create or modify slideshows including pages of the CD or own pages.

The standard slideshows (guided tours) are included under dia90 and above.

See the guided tours

dia1 - 18.09.2000 19:40 - a test
dia2 - no date -
dia3 - no date -
dia4 - no date -
dia5 - no date -
dia6 - no date -
dia7 - no date -
dia8 - 27.11.2003 17:14 - previous slideshow
dia9 - no date -
dia10 - no date -
dia11 - no date -
dia12 - no date -
dia13 - no date -
dia14 - no date -
dia15 - no date -
dia16 - no date -
dia17 - no date -
dia18 - no date -
dia19 - no date -
dia20 - no date -
dia21 - no date -
dia22 - no date -
dia23 - no date -
dia24 - no date -
dia25 - no date -
dia26 - no date -
dia27 - no date -

NAV gDia e o d f

The floating recorder window appears. Now choose the first page of your slideshow sequence.

8

Thin Film Deposition

Description

Purpose
Thin film deposition techniques are used to deposit numerous

We assume in our example that our slideshow shall give an introduction to thin film deposition.

chemical vapour deposition (CVD) techniques. A particular case is the growth of SiO₂ films directly at the wafer surface by thermal oxidation.

Equipment
The equipment ranges from simple furnaces or high-end plasma reactors depending on the deposition method.

Frequent thin films used in microelectronics

metals: Al, Au, Cr, Cu, Ni, Pt, Pd, Ti, W, Zn

metal oxides: aluminium oxide, indium oxide, tin oxide, tantalum pentoxide, titanium dioxide

silicon compounds: silicon dioxide, silicon nitride, polysilicon

alloys: nichrome, TiNi, Al-Si

Thin Films used in Microelectronics

NAV t361 e o d f

We go to the page «Thin film deposition - Description». With the button marked "+" on the recorder we then add the page to our slideshow. Its identification (t361) appears on top of the list.

9

Evaporation

Description

Purpose

Evaporation is mostly used to deposit metal films, typically aluminum, gold or silver onto a wafer surface (or, more generally, onto any workpiece).

How it works

Evaporation relies on the condensation on a cold surface of a heated material in vapor phase.

Equipment

The reactor includes a vacuum chamber with a heating set-up, such as an electron-gun (for e-beam evaporation).



Similarly we add «Evaporation - Description» with id t091

...

Sputtering

Description

Purpose

Sputtering is a widely applied thin film deposition method for a large variety of materials. The resulting layers are a few nanometres to several microns thick with well controlled thickness and material.

How it works

The material to be deposited is bombarded with high energy ions. Surface atoms are ejected and condense on the wafer surface.

Equipment

A sputtering system is a heavy equipment with a vacuum chamber, DC and/or RF power supply and gas supply.



We also add «Sputtering - Description» with id t101

...

Oxidation

Description

Purpose

Oxidation of silicon is used to create a silicon dioxide layer (SiO₂) at the wafer surface, for example for masking purposes.

How it works

The natural oxidation of silicon is enhanced by elevated temperature and exposure to an oxidising agent, such as O₂ or H₂O. Oxidation works at atmospheric pressure.

Equipment

Thermal oxidation requires a furnace, which is usually part of a stack of 3 to 4 furnaces, each dedicated to a specific process.



We also add «Oxidation - Description» with id t111

10

Chemical Vapour Deposition

Description

Purpose

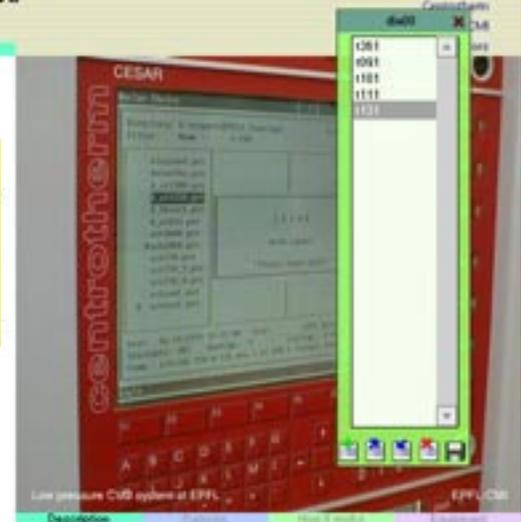
Chemical Vapour Deposition (CVD) is a thin film deposition

Remark: we could also
 - delete some page with the X button, or
 - change the sequence with the arrow buttons

a thin film.

Equipment

CVD equipment includes gas sources, gas feed lines with distribution system and a reactor chamber.



We also add «Chemical vapour deposition - Description» id t131. Finally when the sequence is complete we store the slideshow with the Save button (disquette icon)

1 1

Guided tours and slideshows

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f mon nouveau diaporama
d meine neue Diashow

dis98 27.11.2003 17:26

previous next see edit table

Storing the slideshows brings us back to the editing window. We see now the list of page identifications in the large window.

Let's go back to the table by clicking the Table button. (We could also go directly to step 13 with the See button)

1 2

Guided tours and slideshows

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[See the guided tours](#)

dis11 - 18.09.2003 19:40 - a test
dis12 - no date -
dis13 - no date -
dis14 - no date -
dis15 - no date -
dis16 - no date -
dis17 - no date -
dis18 - no date -
dis19 - no date -
dis20 - no date -
dis21 - no date -
dis22 - no date -
dis23 - no date -
dis24 - no date -
dis25 - no date -
dis26 - no date -
dis27 - no date -
dis90 - 27.11.2003 17:26 - my new slideshow
dis91 - no date -
dis92 - no date -
dis93 - no date -
dis94 - no date -
dis95 - no date -
dis96 - no date -
dis97 - no date -
dis98 - no date -
dis99 - no date -

Now we select our new slideshow by clicking on its line.

1 3

Guided tours and slideshows

my new slideshow

The list contains the names of the slideshow pages.

[Load this slideshow](#)

To modify this slideshow click [Edit](#).

dis98 27.11.2003 17:26

previous next see edit table

We see our new slideshow and load it by clicking on «Load this slideshow»

1 4

Thin Film Deposition

Description

Purpose

Frequent thin films used in microsystems

- metals: Al, Au, Cr, Mb, Pa, Pt, Ta, Ti, Cu
- metal oxides: aluminium oxide, indium oxide, tin oxide, zinc oxide, tantalum oxide, titanium oxide
- silicon compounds: silicon dioxide, silicon nitride, polysilicon, silicides
- alloys: nichrome, permalloy, TiNi, Al-Si-Cu, Al-Si

That's it...

Now we are ready to present our slideshow.