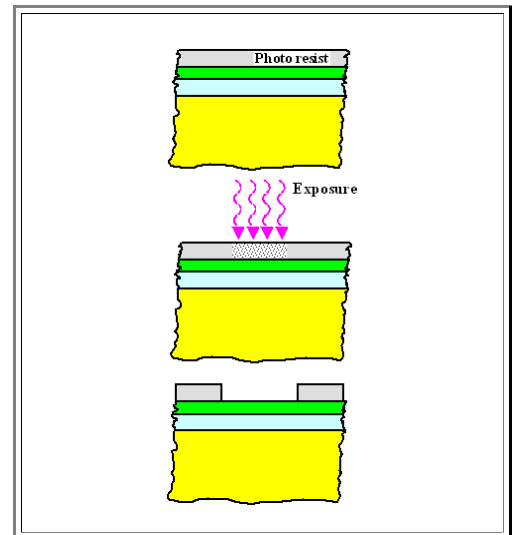


6.5.3 Summary to: 6.5 Lithography

■ **Lithography** comprises three elementary steps:

- Cover the layer to be structured with a light-sensitive layer called (photo) **resist**
- Expose the resist to light only where you want the structure by a "slide projector" called **stepper** (always demagnify the "slide" called **reticle**).
- Develop the exposed resist in such a way that unexposed parts are etched off.
- The structure has now be transferred into the resist; the process is rather similar to regular old-fashioned analog photography.



■ The problem is that we want to make structures with lateral sizes in the **30 nm** region, far smaller than the wavelength of light. This necessitates extreme measures in all components involved

- At the core of lithography are the **steppers** - optical machines for around **5 Mio €** a piece
- Resist technology, too, is a highly developed part of lithography
- For some big problems simple solutions have been found. Example: reticles with pellicles

