

Abstract for Presentation of CHINASSL 2012

Presentation Title: Quality up in photolithography process through Photo mask Cleaning

1. PRESENTATING AUTHOR DETAILS:

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2. PRESENTATION DETAILS

- I Prefer to give an ORAL presentation
- I prefer to give an POSTER presentation
- I am a postgraduate STUDENT

3. ABSTRACT

Title of Presentation:

: Quality up in photolithography process through Photo mask Cleaning

Author(s) (and Affiliations(s)):

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ABSTRACT

General:

As world Market demand for LED devices have been increasing more than 25% yearly, and expected to continue this trend in coming 2 to 3 years. Thus, LED manufactures have been expanding its production capacities throughout the worlds. Especially, in the year of 2011 Majority of its production expansion have been made in China, So many LED production lines and factories have been build.

Production expansion in Photolithography process:

Most LED production lines become 24/7

operations, and thus, UV exposure process by Aligner need many clean photo masks in time. Photo mask cleaning process also needs to improved in both its Quality and efficiency.

Mask Cleaning process:

Current situation and problem:

- 1) Most of Mask cleaners are of particle removal and final cleaning by surfactant detergent model, so resist contaminations are some times remains unclean --- Quality issue
- 2) Most mask cleaners are of manual operation type, which requires Manpower---

Cost issue

- 3) Most mask cleaner facilitated with organic solvent chemical model so, safety measure is costly,
Such as non-explosive structure is required.
--- Cost issue
- 4) Urgent need to improve cleaning efficiency, in order to meet production increase.
--- Productivity issue

Chemical to replace with organic solvent

- 2) Chemical Dip-in process as a standard specification for Resist removal ,
- 3) To lower the operation cost a fully automated model is recommendable .
- 4) To meet production increase, optimize each cleaning process, such as choosing suitable Cleaning chemical, its temperature and dip-in time, etc to shorten the process time.

Identification of issues and proposed solution:

- 1) Resist removal need Chemical treatment;
We tested and evaluated Alkaline

End