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Photomask Manufacturing Technology

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Photomask manufacturing technologies have been improving to support the steadily growing semiconductor industry. Those improvements cannot ever be achieved without the efforts of many researchers and engineers in the photomask community. It is our desire that the improvements realized by their innovative ideas would be widely appreciated by the readers of this journal.

Therefore we appreciate all of the expert authors who have provided contributions to this special section. The contributions are related to one of the following areas of today's most important photomask manufacturing subjects:

- EUV mask, which is considered to be used to realize <10 nm patterning, though there are still many difficult challenges such as defect management, pattern inspection, and pellicle realization.

- Nanoimprint, which is an alternative lithography, substituting for EUVL, featuring low cost patterning, though it has a challenge of defect management.
- OPC (optical proximity correction), which is indispensable in making all of today's advanced photomasks and is becoming more and more aggressive.
- Mask writing technology, the tighter specs of which are becoming quite difficult to meet due to increasing pattern density and data volume.

We hope you will be encouraged by these excellent works as the important milestones of the photomask manufacturing infrastructure. Of course, readers should draw their own conclusions, and, toward that, we urge readers to continue adding to the discussion by publishing new works that can further improve photomask manufacturing technology.