

Enhancement of Performance of Si Nanocrystal Light-Emitting Diodes by Using Ag Nanodots

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Outline

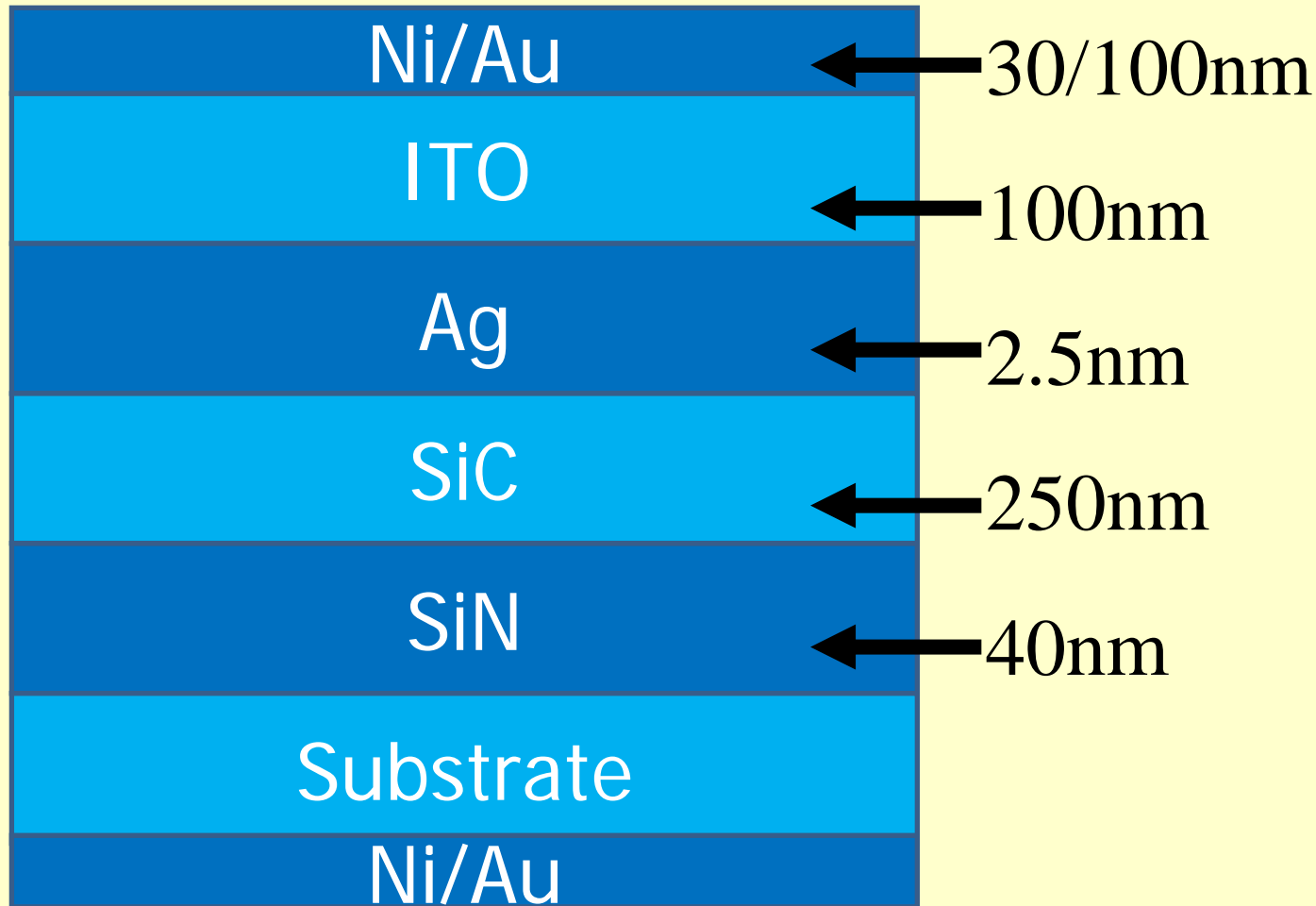
- Introduction
- Experimental details
- Results and Discussion
 - AES
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- Conclusion

Introduction

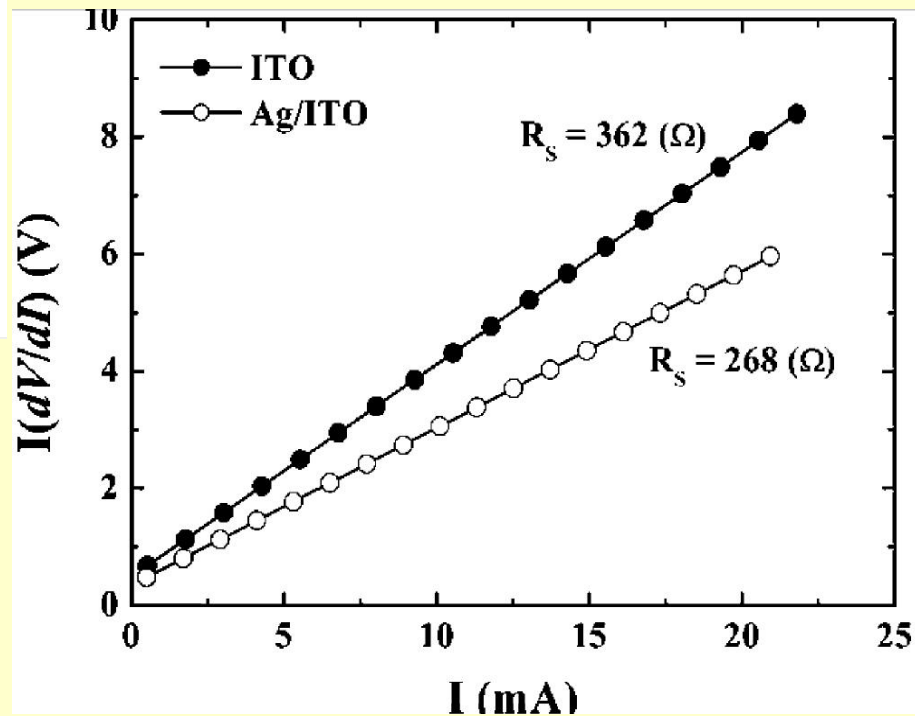
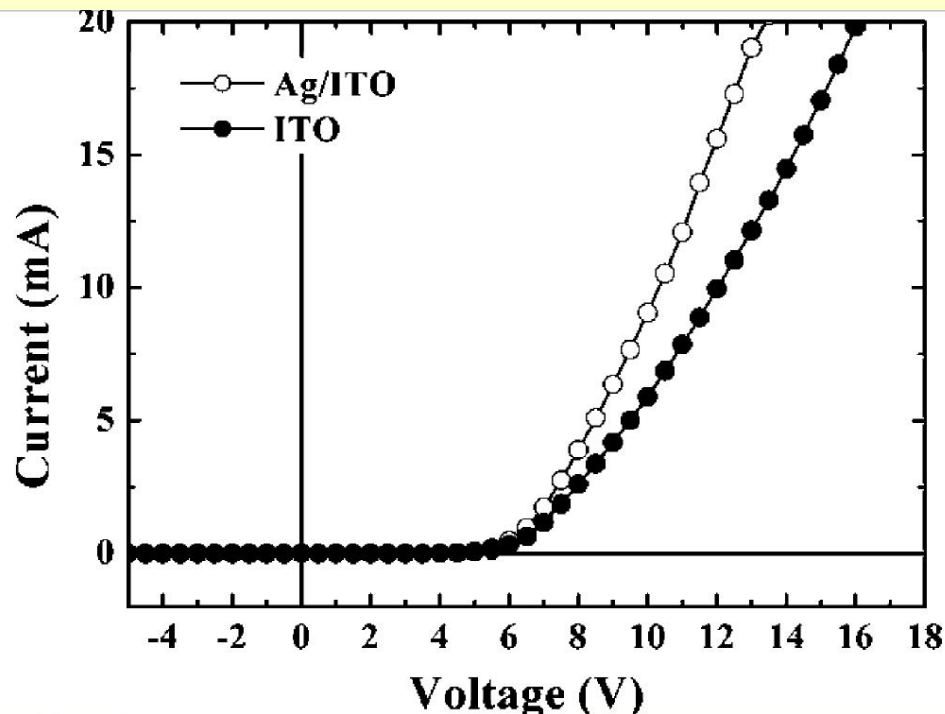
Recently, much research has been devoted towards the Si-based Micro-photonics due to the application for light emitters such as light-emitting diodes (LEDs).

In this letter, we investigated the effects of the formation of Ag nanodots at the contact interface between the ITO layer and an n-SiC film on performance of the nc-Si LEDs.

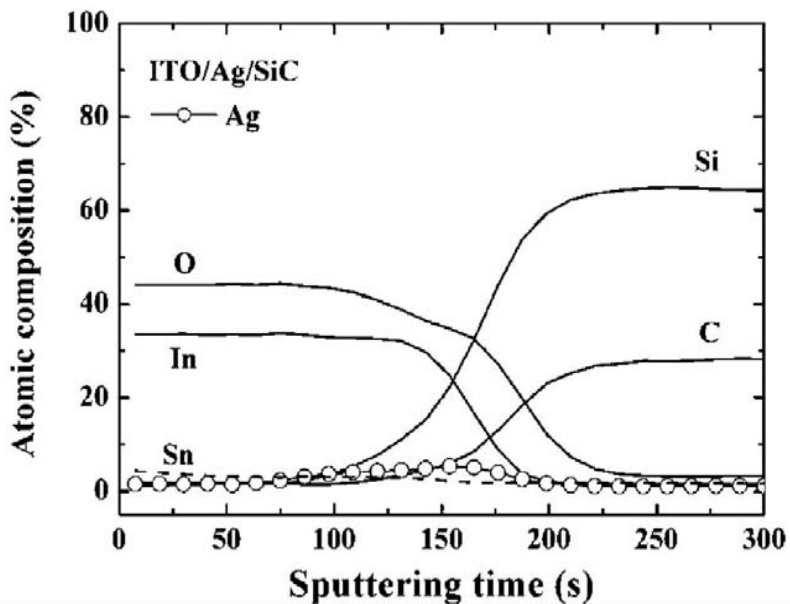
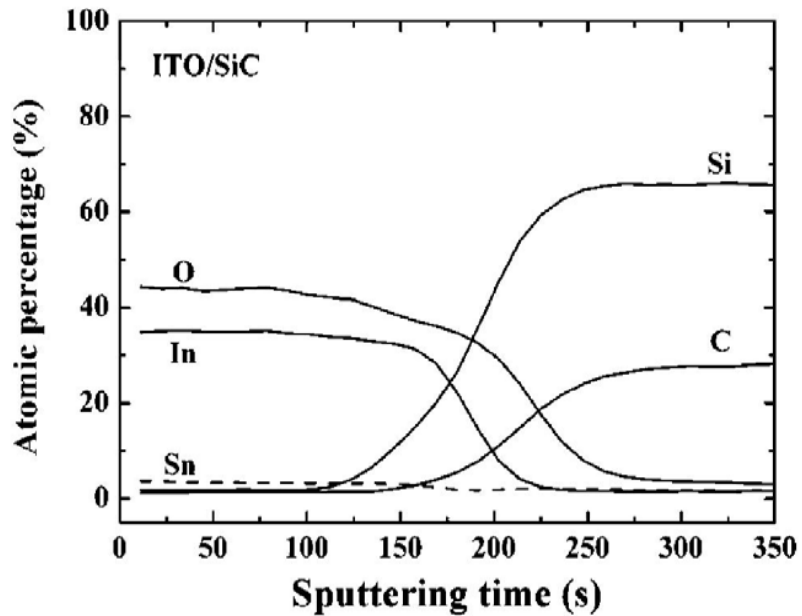
Experimental details



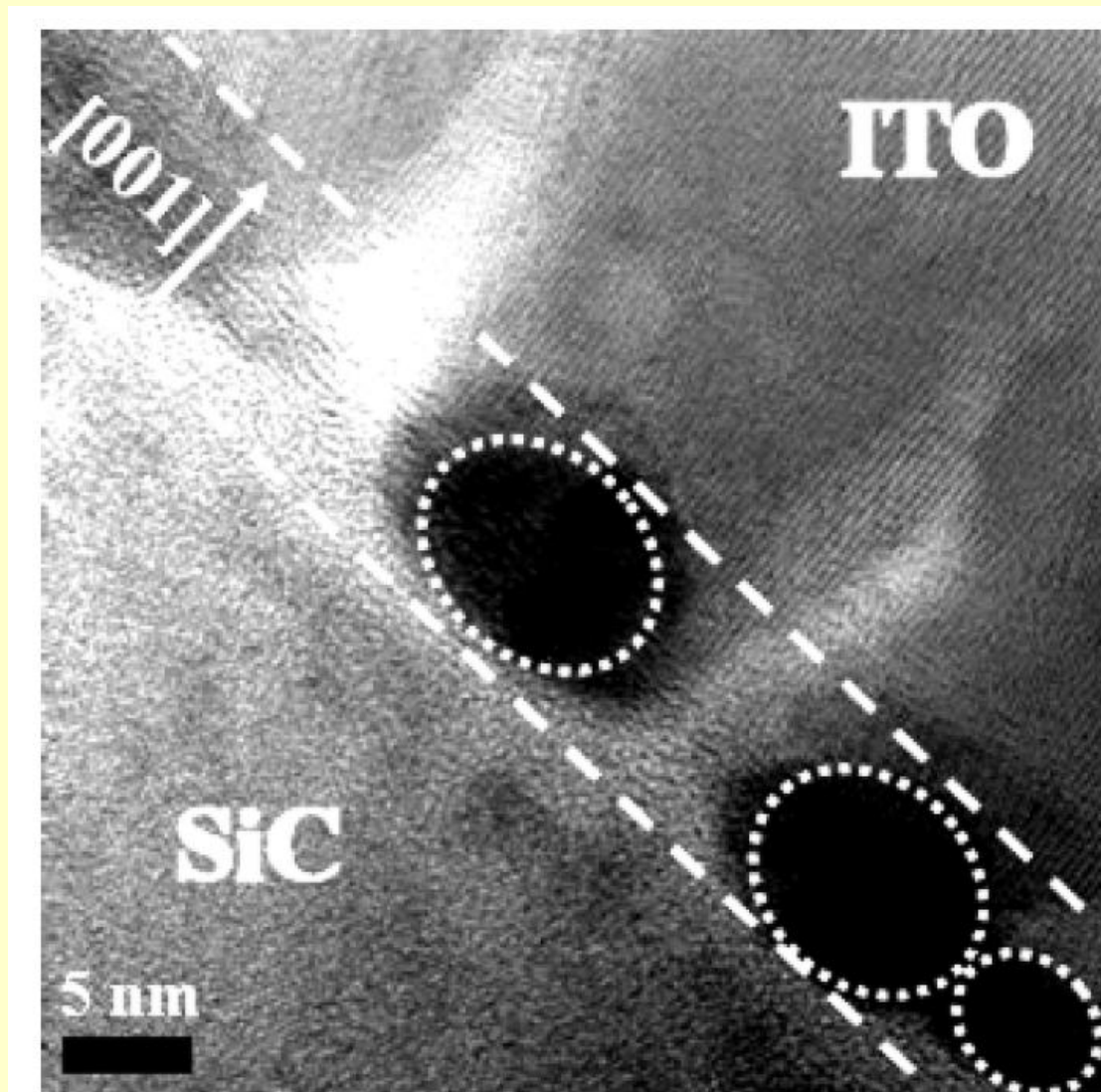
Results and Discussion



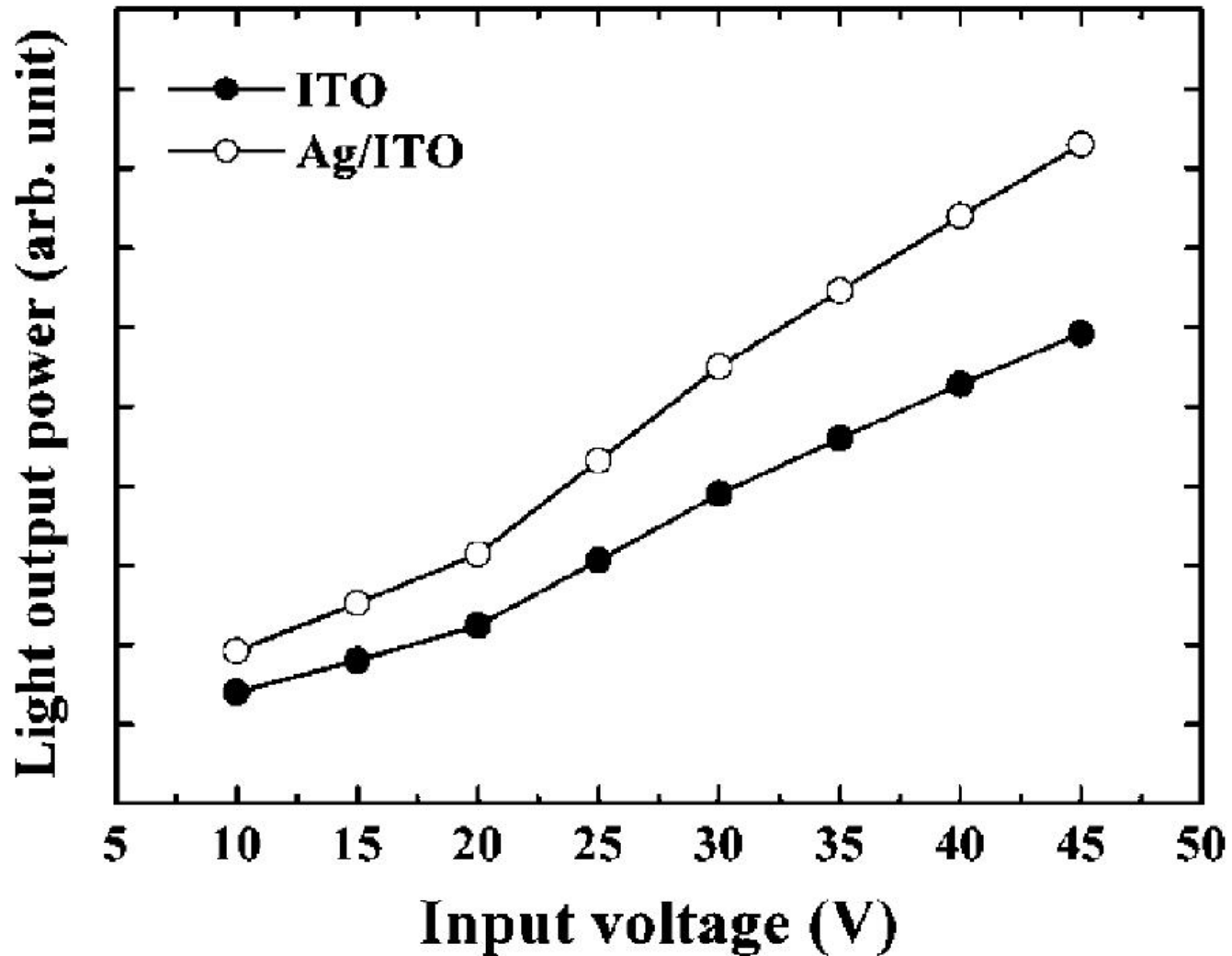
Results and Discussion



Results and Discussion



Results and Discussion



Conclusion

In conclusion, the effects of the formation of Ag nanodots at the ITO–SiC interface on performance of nc-SiLEDs were investigated.

Based on the results of AES and HRTEM analyses, we found that the Ag nanodots at the contact interface between the ITO and n-SiC film resulted in an enhancement in performance of nc-Si LEDs.

Thanks for your attention