Workshop on MBE for Emerging Emitter Technologies
Room Tamaya ABC - Session WME2-SaM

Emerging Materials and Growth Technologies

Moderator: Carolina Adamo, Northrop Grumman

10:30am **WME2-SaM-11 Invited Paper***, **Joseph Falson**,* California Institute of Technology **INVITED**

11:00am **WME2-SaM-13 Invited Paper***, **Larry Lee**,* University of Illinois at Urbana-Champaign **INVITED**

11:30am **WME2-SaM-15 Thermal Laser Epitaxy for Emerging Emitter Materials***, **Brendan Faeth**,* epiray **INVITED**

As the scope of both technological demand and known material systems continues to expand, the need for greater variety and control of constituent sources has begun to strain the capabilities of conventional deposition techniques.Here, we demonstrate a new thin-film deposition technique, Thermal Laser Epitaxy (TLE), which combines IR laser heating of elemental sources with direct CO_2 laser heating of substrates.This approach allows for the evaporation of practically all elements of the periodic table in the same setup, while maintaining even extremely corrosive process gas environments up to pressures as high as 10^{-1} mbar, and at extremely high substrate temperatures. Here, I will introduce and discuss the advantages of TLE for epitaxy, with a focus on applications for emerging emitter materials across a wide range of materials families including oxides, nitrides, and other more exotic opportunities not accessible by conventional MBE approaches.

12:00pm **WME2-SaM-17 Panel Discussion***,*

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