

NC State University (NCSU) has **several post-doctoral position openings** in the field of III-V semiconductors within the Departments of Electrical and Computer Engineering, and Materials Science and Engineering. Post-doctoral research positions are available in the following research areas:

Heterogeneous Integration, Fabrication, and Characterization of III-Nitrides Electronic and Optoelectronic Devices

(Kish): Design and develop next generation heterogeneously integrated III-Nitride optoelectronic and electronic devices. Position will include the device design, fabrication, characterization, and testing of electronic and optoelectronic device structures with the goal of realizing wide bandgap electronic-photonics ICs. Prior experience in III-N device design and fabrication is strongly preferred.

III-Nitride RF Device Design, Fabrication and Characterization (Pavlidis):

Design and model novel RF devices using wide bandgap (WBG) and ultra-wide bandgap (UWBG) III-Nitrides for next-generation power amplifiers. Fabricate these devices, considering opportunities for the integration of heterogeneous materials via wafer bonding to enhance performance/functionality. Perform DC-to-RF characterization of devices and test structures to link materials properties to device behavior. Prior experience with III-V HEMTs and/or HBTs is preferred.

III-Nitride Epitaxy and Materials Characterization (Sitar):

MOCVD growth of III-nitrides (primarily) on native substrates, III-nitride structures (heterojunctions, MQWs, graded layers, lateral polarity structures) for electronic and optoelectronic devices, materials characterization (XRD, AFM, XPS, SEM, TEM, PL, electrical). Experience in III-nitride or related wide bandgap semiconductors is required. Strong physics background is desired.

NCSU has a foundational legacy of disruptive innovation in wide-bandgap materials and devices for electronics and optoelectronics. We are establishing advanced research capabilities to build radically different high-power RF devices, as well as photonic and optoelectronic systems based on wide-bandgap semiconductors (primarily III-Nitride materials). Heterogeneous integration with other semiconductors will also be explored to broaden the performance spectrum. These advances will enable advances in a wide range of fields, including wireless and optical communications, sensors, imaging, and quantum photonics. At NCSU, we have over 100 cumulative years of leadership experience in advancing state-of-the-art solutions in III-nitride materials and devices, optoelectronics/photronics, and photonic integrated circuits. We have world-leading capabilities and research efforts in the areas of crystal growth, materials integration, and device processing of III-Nitride devices.

Qualified candidates should send their curriculum vitae to the faculty in respective research areas :

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