



UNIVERSITY of  
RWANDA



# Public Seminar

## Topic: System in Package (SiP): Technology Trends and Integration Challenges



### Venue:

UR,-College of science and Technology  
Agaciro Building, 1<sup>st</sup> Floor



Date: 16<sup>th</sup> May ,2025  
10:00 am

Presented by: Dr. Kamgaing Telesphor

## Bibliography

Telesphor Kamgaing is an IEEE Fellow with significant contributions to microwave, millimeter-wave packaging and system integration technologies. Until recently he was a Senior Principal Engineer with the Intel Client Computing Group (CCG) where he drove microelectronic packaging innovation for next gen client products. He joined Intel in 2004 from the Digital DNA Labs of Motorola, where he researched semiconductor devices and processes for early generation (1.75G-2G) cellular phones. At Intel, he pioneered several research initiatives including the expansion of Intel FCBGA package substrate to include embedded RF passives, the development of low-cost organic millimeter-wave and sub-Terahertz packaging solutions targeting thin and light devices, automotive, data centers and 5G/6G infrastructure. He also contributed to early 3D-IC research that delivered Intel silicon interposer aka Foveros. His groundbreaking research on glass interconnects is foundational to the next inflection point in the microelectronic packaging industry.

Dr. Kamgaing graduated with a Ph.D. degree from the University of Maryland at College Park and a Diplom-Ingenieur degree from Technical University Darmstadt in Germany, both in Electrical Engineering. He has served on the technical program committees of several IEEE conferences and peer-reviewed journals. He is a recipient of the IEEE MTT-S Outstanding Young Engineer Award, three Intel Top Inventor Awards, the Intel Labs Gordon E More Academy (Gordy) Award, the Intel Quality Award, the Intel Global Diversity Inclusion and Social Impact Achievement Award, the Intel Insights Technical Leadership Award. He has co-authored over 85 technical papers and is the inventor of over 370 granted patents worldwide and more than 200 additional pending patent applications.

## Abstract

As demand for form factor shrinkage and cost reduction continues to drive the trends for modern wireless communication and computing devices, the role of the package as key medium for integration becomes paramount. In the mobile market segment, strict restrictions on the package z-height and footprint require innovation in package design and architectures to address performance degradation and multi-radio coexistence. Some high-density packaging approaches that are being addressed across the industry include various options for die or package stacking, and die embedding in the package core or build-up layers. It's envisaged that most platforms will utilize multiple chiplets in the near future, with the ultimate vision being the heterogeneous integration of the whole platform on a single package. In this presentation we will examine some recent advances and integration challenges in packaging for converged computing and communication systems.