

## Symposium Speaker

Full Name	Kisung Park
Affiliation	Coset Inc.
Presentation Title	Hermetic Sealed 100Gbps ROSA Package Design Using AlN Substrate and Si Optical Bench Cover

### Biography

Dr. Kisung Park received BS degree in electronics engineering from Ajou Univ. in 1983, and MS and Ph.D. degrees in optoelectronic major from KAIST (Korea Advanced Institute of Science and Technology) in 1985 and 1992. He worked in ETRI as a principal researcher from 1985 to 1998, where he had engaged in development of fiber-optic chip and packaging technologies for telecommunications. After ETRI, he established venture company with his ETRI colleagues, Lightron, which its major products are optical transceiver modules for optical subscriber applications. In Lightron, his role was CTO and marketing. He worked in solar industry from 2007, and back to ETRI in 2012. His role in ETRI was to support R&D of small and medium size companies in Korea. He is currently working in Coset Inc. as a CSO.

### 200 words abstract

In this talk, the compact size hermetic sealed 100 Gb/s (25 Gb/s x 4 channels) receiver optical sub-assembly (ROSA) package design using AlN substrate and Si optical bench (SiOB) cover is proposed. Optoelectronic chips are bonded on the AlN substrate and the deep V-groove etched SiOB cover is flip chip bonded on the AlN substrate. The optoelectronic chips are located inside the etched V-groove that is hermetic sealed by Au/Sn solder material. The electrical signals are connected to bottom side of the AlN substrate through via holes filled with Cu. The passive optical components are bonded on the top of the SiOB cover and the horizontally input light with 1.3  $\mu\text{m}$  range is reflected on the 45° mirror to go down to photodiode array chip through anti-reflection coated SiOB cover. Another advantage of this design is low cost by elimination of expensive ceramic package and mechanical machining components. The assembled ROSA LR4 module shows DC responsivity values higher than 0.65 A/W and better than -13 dBm OMA sensitivity in the condition of 10-12 BER with the 25 Gb/s PRBS 231-1 NRZ data.