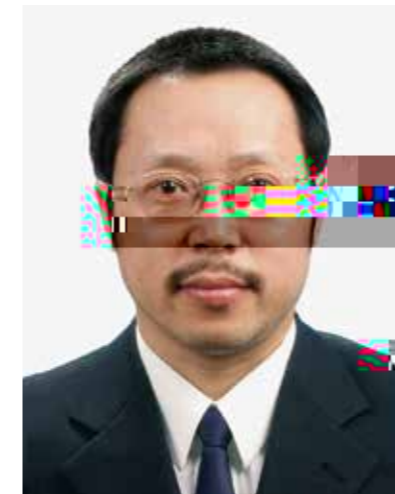


Zhu Ninghua, Institute of Semiconductors, Chinese Academy of Sciences

Professor Zhu proposed a series of techniques for analysis and compensation of the parasitic parameters of laser diodes, and discovered a novel structure laser based on coupled cavities to ease the contradiction between modulation speed and output power. A novel three-dimensional optoelectronics packaging technology was proposed to cope with the electrical impedance mismatching and mode field mismatching problems existing in the packaging of photonics integrated circuits. He developed high-speed lasers with modulation bandwidths over 28 GHz and laser array modules. These techniques have been widely applied by a few world-leading optical component suppliers and equipment manufacturers, such as Accelink and Huawei.

Professor Zhu is one of the outstanding representatives in the field of Optoelectronics in China. He was appointed as one of the main coordinators for making the optoelectronics development strategy plan by the Ministry of science and technology and the National Natural Science Foundation of China. He has made important contributions to the development of optoelectronic devices and its integration technology in our country.



祝宁华



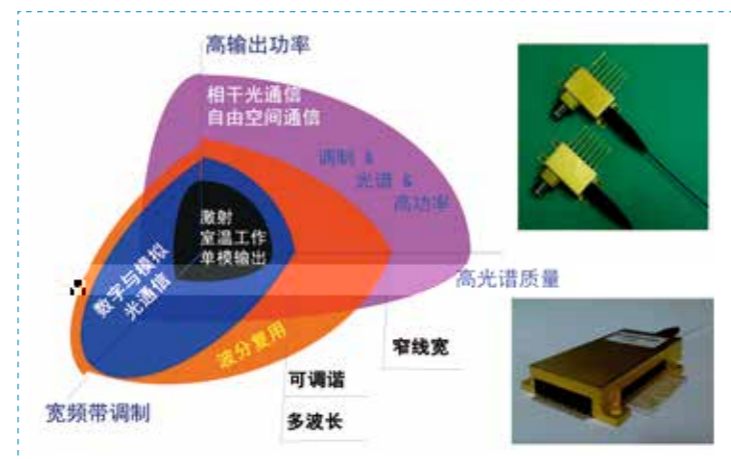
主要科技贡献：

28YZ'

Zhu Ninghua



28G Hz  
2013,  
2016,  
2016,



Professor Zhu's Team has made the fundamental contributions to the key technologies of microwave packaging design and fabrication for semiconductor lasers, successfully developed high speed and laser array modules for optical communications and microwave photonics systems. The project "High speed semiconductor laser diode fabrication, testing, and microwave packaging" received the Second Grade of National Technology Invention Award of China in 2013.

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### Directly Modulated Semiconductor Lasers

Ning Hua Zhu, Member, IEEE, Zhan Shi, Zhi Ke Zhang, Yi Ming Zhang, Can Wen Zou, Ze Ping Zhao, Yu Liu, Wei Li, Member, IEEE, and Ming Li, Member, IEEE

(Invited Paper)

Labels in diagram: 内腔 (Internal cavity), 隔离 (Isolation), 光栅 (Grating), DC bias circuit, Solder, RF signal, Series resistor, DML chip, Package photograph.

28G Hz

Professor Zhu's Team proposed a novel laser structure with coupled cavities and developed a three-dimensional packaging technique to significantly eliminate the effects of electrical impedance mismatching and mode field mismatching problems for the packaging of photonic integrated circuits. A high-speed directly modulated laser with a modulation bandwidth over 28 GHz was successfully developed.