

Simulation Techniques in Microwave Photonics Systems

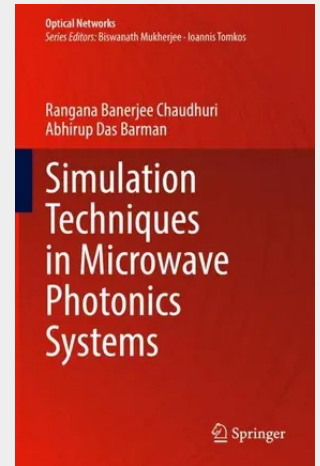
As wireless networks evolve into the era of 5G, 6G, and THz technologies, Microwave Photonics is rapidly emerging as a cornerstone for high-frequency communication, advanced sensing, and next-generation radar systems. Yet designing these complex systems demands more than theory – it requires mastery of practical, simulation-based techniques.

is a comprehensive guide that brings together the theory and hands-on simulation of modern microwave photonic architectures. Using industry-leading platforms, **OptiSystem® and ADS® (Advanced Design System)**, this book walks the reader through the design, modeling, and analysis of photonic subsystems for high-frequency RF applications, including:

- RF signal generation via Mach-Zehnder and Polarization modulators
- High-order frequency multiplication and optical frequency comb design
- Simulation and optimization of photonic transceivers for radio over fiber (RoF) links
- Emerging techniques for THz signal generation suitable for 5G/6G infrastructure

Whether you are a **graduate student, researcher, or engineering professional**, this book serves as both a practical manual and a technical reference – equipping the reader with the tools to simulate, innovate, and lead in one of the fastest-moving fields in modern technology.

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