

SPECIAL ISSUE

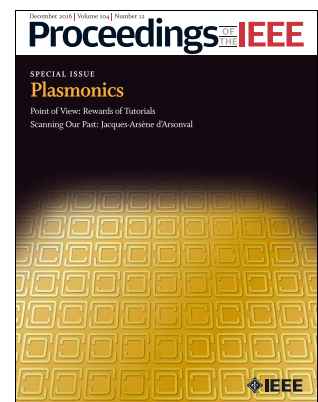
PLASMONICS

Edited by P. Berini, S. Bozhevolnyi, and D.-S. Kim

- 2270 Development of Optical Metasurfaces: Emerging Concepts and New Materials**
 By A. M. Shaltout, N. Kinsey, J. Kim, R. Chandrasekar, J. C. Ndukaife, A. Boltasseva, and V. M. Shalaev
|INVITED PAPER| This paper reviews the operating principles of metasurfaces, materials typically used in their realization, and then surveys applications.
- 2288 Extraordinary Optical Transmission: Fundamentals and Applications**
 By S. G. Rodrigo, F. de León-Pérez, and L. Martín-Moreno
|INVITED PAPER| This paper reviews the different mechanisms that lead to extraordinary optical transmission with an emphasis on recent areas of research and applications.
- 2307 Quantum Plasmonics**
 By J. M. Fitzgerald, P. Narang, R. V. Craster, S. A. Maier, and V. Giannini
|INVITED PAPER| This paper discusses the major theoretical frameworks and applications such as sensing, lasing, and quantum computing, of the emerging area of quantum plasmonics.
- 2323 Amplification and Lasing of Plasmonic Modes**
 By J. S. T. Smalley, F. Vallini, Q. Gu, and Y. Fainman
|INVITED PAPER| This paper reviews the involvement of surface plasmons in optical amplification and lasing processes and offers a perspective on the challenges ahead.
- 2338 Benchmarking System-Level Performance of Passive and Active Plasmonic Components: Integrated Circuit Approach**
 By A. V. Krasavin and A. V. Zayats
|INVITED PAPER| This paper discusses figures of merit for comparing surface plasmon waveguides and introduces several benchmarks for different types of plasmonic modulators.
- 2349 Plasmonic Photodetectors, Photovoltaics, and Hot-Electron Devices**
 By M. L. Brongersma
|INVITED PAPER| This review reports on the progress made in the field of plasmonic photodetectors and energy harvesting devices.
- 2362 Plasmonic Organic Hybrid Modulators—Scaling Highest Speed Photonics to the Microscale**
 By C. Haffner, W. Heni, Y. Fedoryshyn, A. Josten, B. Baeuerle, C. Hoessbacher, Y. Salamin, U. Koch, N. Đorđević, P. Mousel, R. Bonjour, A. Emboras, D. Hillerkuss, P. Leuchtman, D. L. Elder, L. R. Dalton, C. Hafner, and J. Leuthold
|INVITED PAPER| This paper explores plasmonics as a viable technology for single-channel intensity modulators and more sophisticated IQ modulators.
- 2380 Optical Biosensors Based on Plasmonic Nanostructures: A Review**
 By B. Špačková, P. Wrobel, M. Bocková, and J. Homola
|INVITED PAPER| This paper reviews the fundamentals of optical biosensors and presents recent technological advances and applications.

DEPARTMENTS

- 2262 POINT OF VIEW**
 Rewards of Tutorials
 By H. J. Trussell and S. Basu
- 2267 SCANNING THE ISSUE**
 Plasmonics
 By P. Berini, S. Bozhevolnyi, and D.-S. Kim
- 2409 SCANNING OUR PAST**
 Jacques-Arsène d'Arsonval: His Life and Contributions to Electrical Instrumentation in Physics and Medicine. Part I: Early Life and Activities in Physiology
 By S. Reif-Acherman
- 2416 FUTURE SPECIAL ISSUES/SPECIAL SECTIONS**



On the Cover: This month's cover shows an artist's rendition of metasurfaces, which are 2-D metamaterials, constructed by defining subwavelength features on a plane.