

Preface

Plasmonics is a rapidly developing field that blends together fundamental research and applications ranging across physics, chemistry, biology, medicine, engineering, defense, environmental sciences, etc. It dates back to 1950s when surface plasmon polaritons were discovered [1, 2]. Its development received a new impetus in mid-1970s with the discovery of surface-enhanced Raman scattering (SERS) [3–5], and again following the observation of giant single-molecule SERS [6, 7]. However, it was during the past decade that plasmonics experienced a truly explosive growth. This book is a snapshot of current developments in various areas of plasmonics presented in several reviews written by leading researchers in the field.

The material is arranged in 15 chapters starting with an overview by one of the Editors followed by topical reviews. It is assumed that the reader is familiar with the fundamentals; a number of excellent recent introductory texts are available [8–11]. Naturally, the included topics do not nearly cover the incredible breadth of current plasmonics research and applications, but hopefully will give readers an interesting summary of this exciting field.

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