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Advances in Metamaterials

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Message from the Guest Editor

In the past two decades, metamaterials (MMs) have led a revolution in new material science through the artificial arrangement of electric- and magnetic-resonance structures (meta-atoms) at subwavelength scale. In particular, they have enriched the fundamental rules of matter–light interactions. The main reason for the attention paid to MMs is that they are very close in appearance to real life, such as perfect absorbers. EM MMs reveal remarkable responses to the incident EM wave, such as negative-refraction index, extraordinary optical transmission, electromagnetically induced transparency-like effects, and ultra-thin and broadband absorbers. The designed structures, the structural parameters, and the properties of materials used yield the effective electric permittivity and the effective magnetic permeability of overall MMs, based on the effective-medium theory. Studies on the control of EM response and its spatial distribution and dispersion are ripe and lead to potential and almost-realized applications. There have been emerging fields in MM research, such as nonlinear, switchable, sensor, quantum, and coding MMs, all representing a variety of MM applications.

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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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