Record Nr. UNINA9910438040703321 Autore Chui S. T. Titolo Electromagnetic behaviour of metallic wire structures // S. T. Chui, Lei Zhou London;; New York,: Springer, 2012 Pubbl/distr/stampa **ISBN** 1-283-62202-5 9786613934475 1-4471-4159-8 Edizione [1st ed. 2013.] Descrizione fisica 1 online resource (143 p.) ZhouLei <1979 Dec. 4-> Altri autori (Persone) Disciplina 620.1/697 Soggetti Metals - Electric properties Metals - Magnetic properties Electromagnetic waves Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Preface -- Introduction -- 1. Resonance properties of metallic ring systems: a single ring -- 2. Resonance properties of metallic ring systems: more complex structures -- 3. Helical structures -- 4. General multiply connected metallic wire networks: T and H -- 5. Jerusalem cross -- 6. Metallic wire structures under a moderate electromagnetic field -- 7. Electromagnetic waves in wire composites I: Plasmonics -- 8. Electromagnetic waves in wire composites II: anisotropic, off-diagonal magnetoelectric wire composites. Sommario/riassunto Despite the recent development and interest in the photonics of metallic wire structures, the relatively simple concepts and physics often remain obscured or poorly explained to those who do not specialize in the field. Electromagnetic Behaviour of Metallic Wire Structures provides a clear and coherent guide to understanding these phenomena without excessive numerical calculations. Including both background material and detailed derivations of the various different formulae applied, Electromagnetic Behaviour of Metallic Wire Structures describes how to extend basic circuit theory relating to voltages, currents, and resistances of metallic wire networks to include situations

where the currents are no longer spatially uniform along the wire. This

lays a foundation for a deeper understanding of the many new phenomena observed in meta-electromagnetic materials. Examples of applications are included to support this new approach making Electromagnetic Behaviour of Metallic Wire Structures a comprehensive and self-contained volume suitable for use by specialists, non-specialist, researchers and professionals in other relevant fields and even students.