

# Preface

Radar cross section (RCS) reduction can be achieved by controlling the reflections from the surface of the structure. Plasma envelope is one of the ways to control the reflections and scattering from the surface. The problem of electromagnetic (EM) propagation within bounded plasma can be approximated as multilayered dielectric problem. In this book, EM wave propagation within the plasma covered radar absorbing material (RAM) is discussed. The analytical formulation for the reflection coefficient of the plasma covered RAM based on impedance transformation method is presented. Both homogeneous and inhomogeneous plasma are considered. The effect of plasma parameters, such as electron density, collision frequency, plasma thickness, plasma density profile, etc., on the absorption behavior of plasma–RAM structure is discussed through various illustrations. This book provides an insight of EM propagation within plasma, that is, the basis of achieving plasma-based stealth.

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