

Foreword

It has been nine years since Dr. Ted Anderson published the first edition of Plasma Antennas. I have had the pleasure of watching Ted's work continue to advance into new areas of research and practical application.

Plasma as a state of matter is harder to understand than the other states of liquids, solids and gasses but the fact remains that plasma, once understood and controlled, creates unbelievable manipulation of the electromagnetic spectrum and allows you unimpeded access into the realm of the possibilities of what can be done in the physical spectrums. Ted's work in the area of magnetic resonance imaging and positron emission tomography (MRI and PET) is a perfect example of what can be done using plasma antenna technologies in the medical field which solves attenuation problems, power problems and inherent interference problems with the use of conventional metal antenna coils.

Extensive work has been accomplished using plasma technology in the radar field for beamforming and phase shifting along with the sheer speed of which an aperture can be formed, used, discarded and then regenerated simply based on the plasma lens state of being on or off and has tremendous applicability in the area of low observables. The plasma-type antennas are possibly the ultimate answer in the search for the "ideal" antenna, especially for platforms comprised of non-conducting composite materials. Depending on the antenna system's function, whether for communication, radar or any relevant intelligence function, a plasma antenna of any desired size, shape, and operational frequency band could be instantiated at any appropriate location on the platform. When the system is not in use the antenna simply disappears.

This second edition of Plasma Antennas goes a step farther and broadens the spectrum of thought as to where this technology will go in the future. Dr. Anderson has added an additional 15 patents to the previous 20 already in his portfolio since his first book was published. Enjoy the read!

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