Plasma Optics

Published date: Nov. 28, 2012

Technology description

Pasted from final 2-Stroke Report: In Adaptive Optics (AO) systems, mechanical deformable mirrors work to correct distortions in optical wave-fronts which cause degraded optical performance. These microelectromechanical systems (MEMS) components generally have slow response times and are susceptible to mechanical degradation, limiting their performance and operational lifetime. A new class of optical components is proposed, based on the optical properties of plasma which can be electrically controlled to correct optical wave-front distortions in AO systems. These components exhibit extremely fast response times and no moving parts. A potential 100X improvement in AO control system response time could enable more sophisticated laser weaponry and secure communications in military aircraft.
An innovative plasma based adaptive optics approach that improves the performance of optical systems by reducing the affect of external optical distortions. Plasma optics uses an array of miniature weakly ionized a.c. plasma "cells" to generate a fast responding, highly controllable wavefront to compensate for temporal and spatial distortion. This platform can be used in medical (opthalmic procedures) and light-based communication applications.

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