Abstract Submitted for the MAR08 Meeting of The American Physical Society

Novel electromagnetic effective medium based on nanocoaxes¹ KRZYSZTOF KEMPA, XIWEN WANG, ZHIFENG REN, MICHAEL J. NAUGHTON, Boston College — A thin film of an opaque material, pierced with an array of subwavelength coaxial nanowaveguides, decomposes an incident electromagnetic wave into spatially discrete wave components, propagates these components without frequency cut-off through the film, and reassembles them on the far side. The propagation of these wave components is fully controlled by the physical properties of the waveguides and their geometrical distribution in the array. This allows for an exceptional degree of control over the electromagnetic response of this effective medium, with numerous potential applications, including metamaterial functionality enabled in the visible frequency range.

¹Supported in part by Solasta Inc.

Krzysztof Kempa Boston College

Date submitted: 26 Nov 2007

Electronic form version 1.4