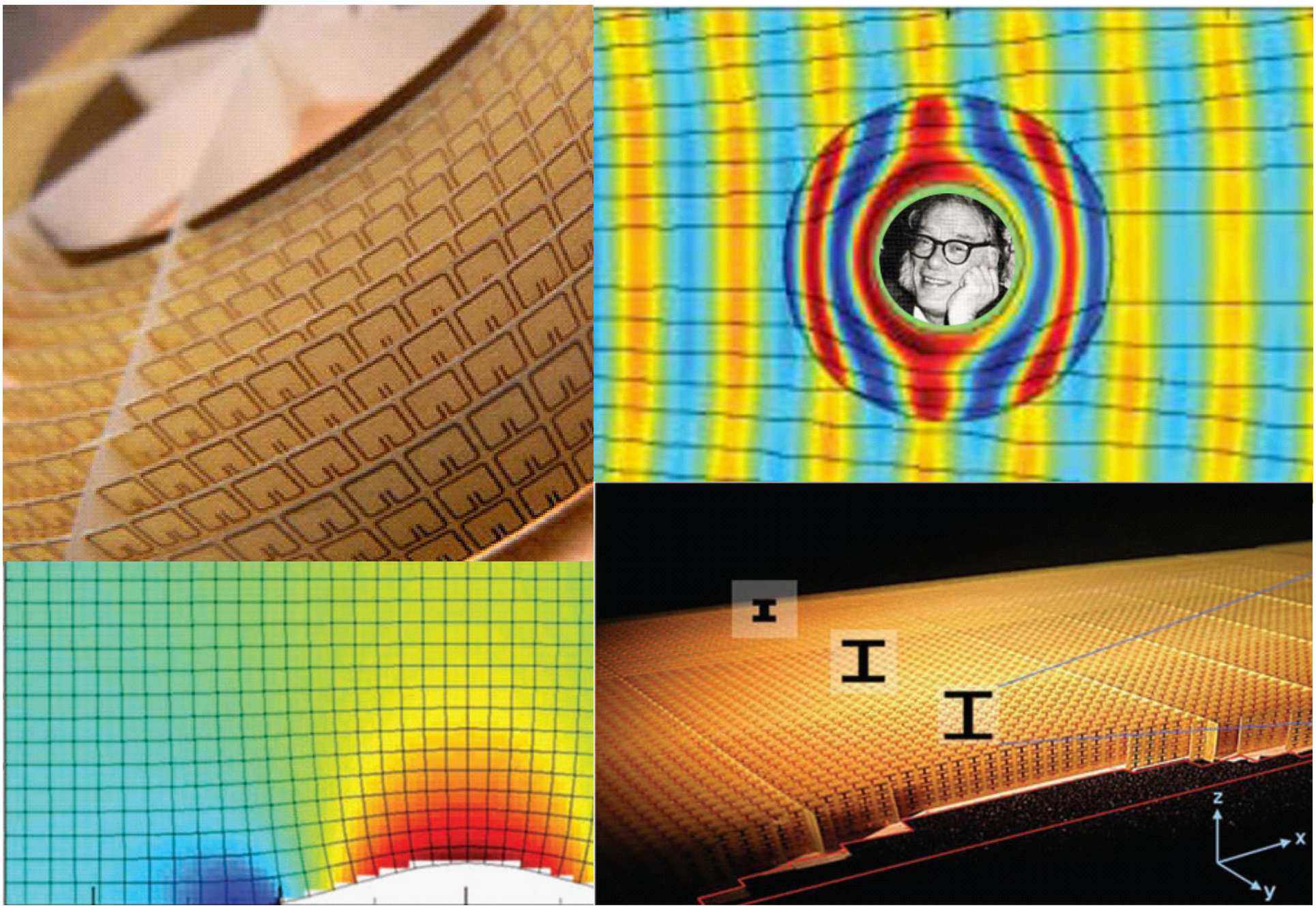
Boston University Physics Colloquium



Transforming Light with Metamaterials

In Transformation Optics (TO), the key tool for optical design is the use of coordinate transformations. TO is an intuitive means of design media that provide unprecedented control over the propagation of light and other electromagnetic waves. The TO approach, for example, was applied by our group to design a metamaterial "invisibility" cloak designed to operate at microwave frequencies. The types of media that result from TO are inherently complex, being generally anisotropic and requiring both electric and magnetic response; however, continued investigation has revealed ways to integrate these powerful concepts in practical optical design approaches. In this talk, I will describe some of our work in designing both exotic as well as less-exotic (but more practical) quasi-optical TO devices, and will show that artificially structured metamaterials may be an optimal platform for TO media.

David Smith

Duke University

April 26, 2011 (Tuesday) at 3:30pm (Refreshments at 3:15pm)

SCI 107, Metcalf Science Center, Boston University

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