

Abstract Submitted  
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**Analytical and numerical analysis of a generic cloaking system<sup>1</sup>**

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We present a technique to realize a multi-shell generic cloaking system. By considering specific geometrical and material properties for the shells around the object, we were able to achieve a transparency conditions independent of object's optical properties in quasi-static regime. A complete suppression of dipolar scattering is demonstrated for an arbitrary object enclosed in such a system. We propose *tunable-low loss* realistic shell designs based on composite media and the effect of dispersion on the overall scattering cross-section is evaluated. Full wave analytical and numerical simulations based on the transparency conditions obtained in the quasi-static limit are performed. It is shown that strong reduction of the scattering by a factor of up to  $10^3$  can be achieved across the entire optical spectrum.

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