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(71) Applicant: **METALENZ, INC.** [US/US]; 375 Highland Street, Weston, MA 02453 (US).

(72) Inventors: **RILEY, Gilbert, N. Jr.**; 630 Hemenway Street, Marlborough, MA 01752 (US). **DEVLIN, Robert**; 2472 Norwood Avenue, Abington, PA 19001 (US). **ERLICH, Adam**; 741 Massachusetts Avenue, Arlington, MA 02476 (US). **LATAWIEC, Pawel**; 15 Gardner Street, Apt. 10, Allston, MA 02134 (US). **GRAFF, John**; 25 Walker Road, Swampscott, MA 01907 (US).

(74) Agent: **PECK, John, W.**; KPPB LLP, 2190 S. Towne Centre Place, Suite 300, Anaheim, CA 92806 (US).

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(54) Title: TRANSMISSIVE METASURFACE LENS INTEGRATION

(57) Abstract: Metasurface elements, integrated systems incorporating such metasurface elements with light sources and/or detectors, and methods of the manufacture and operation of such optical arrangements and integrated systems are provided. Systems and methods for integrating transmissive metasurfaces with other semiconductor devices or additional metasurface elements, and more particularly to the integration of such metasurfaces with substrates, illumination sources and sensors are also provided. The metasurface elements provided may be used to shape output light from an illumination source or collect light reflected from a scene to form two unique patterns using the polarization of light. In such embodiments, shaped-emission and collection may be combined into a single co-designed probing and sensing optical system.



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