



US 20230230991A1

(19) **United States**

(12) **Patent Application Publication**
FU et al.

(10) **Pub. No.: US 2023/0230991 A1**

(43) **Pub. Date: Jul. 20, 2023**

(54) **IMAGING SYSTEM AND METHOD OF CREATING COMPOSITE IMAGES**

Publication Classification

(51) **Int. Cl.**

H04N 25/611 (2006.01)

H04N 23/16 (2006.01)

H04N 25/13 (2006.01)

H04N 5/265 (2006.01)

(52) **U.S. Cl.**

CPC *H04N 25/611* (2023.01); *H04N 23/16*

(2023.01); *H04N 25/134* (2023.01); *H04N*

5/265 (2013.01)

(57)

ABSTRACT

An imaging system and a method of creating composite images are provided. The imaging system includes one or more lens assemblies coupled to a sensor. When reflected light from an object enters the imaging system, incident light on the metalens filter systems creates filtered light, which is turned into composite images by the corresponding sensors. Each metalens filter system focuses the light into a specific wavelength, creating the metalens images. The metalens images are sent to the processor, wherein the processor combines the metalens images into one or more composite images. The metalens images are combined into a composite image, and the composite image has reduced chromatic aberrations.

(71) Applicant: **Applied Materials, Inc.**, Santa Clara, CA (US)

(72) Inventors: **Jinxin FU**, Fremont, CA (US); **Yongan XU**, Santa Clara, CA (US); **Ludovic GODET**, Sunnyvale, CA (US); **Naamah ARGAMAN**, San Jose, CA (US); **Robert Jan VISSER**, Menlo Park, CA (US)

(21) Appl. No.: **18/185,863**

(22) Filed: **Mar. 17, 2023**

Related U.S. Application Data

(63) Continuation of application No. 16/859,708, filed on Apr. 27, 2020, now Pat. No. 11,610,925.

(60) Provisional application No. 62/858,258, filed on Jun. 6, 2019.

