

PUBLIC VERSION

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

COREPHOTONICS, LTD.,
Patent Owner.

Case No. IPR2020-00860, IPR2020-00487

DECLARATION OF ERAN KALI

APPLE V. COREPHOTONICS

I, Eran Kali, do hereby declare as follows:

1. I am a co-founder of and the Vice President of Sales and Licensing for Corephotonics, Ltd. (“Corephotonics”), the Patent Owner in these proceedings.

2. I make this declaration on the basis of personal knowledge, and if called and sworn as a witness, I could and would testify as set forth herein.

3. I am familiar with Corephotonics’ business and with the matters discussed in this declaration.

Corephotonics’ Business

4. I co-founded Corephotonics in 2012 to develop the next generation of mobile phone cameras.

5. In 2012, Corephotonics developed an innovative dual-aperture camera system that uses two fixed-focal length lenses, one being a wide-angle lens, and the other being a miniature telephoto lens. Through the use of imaging data from two cameras to produce a single image, Corephotonics’ technology offered enormous improvements over conventional camera systems for smartphones in both optical resolution and image zoom performance. At the time, single-aperture camera systems were typical, and zoom functionality

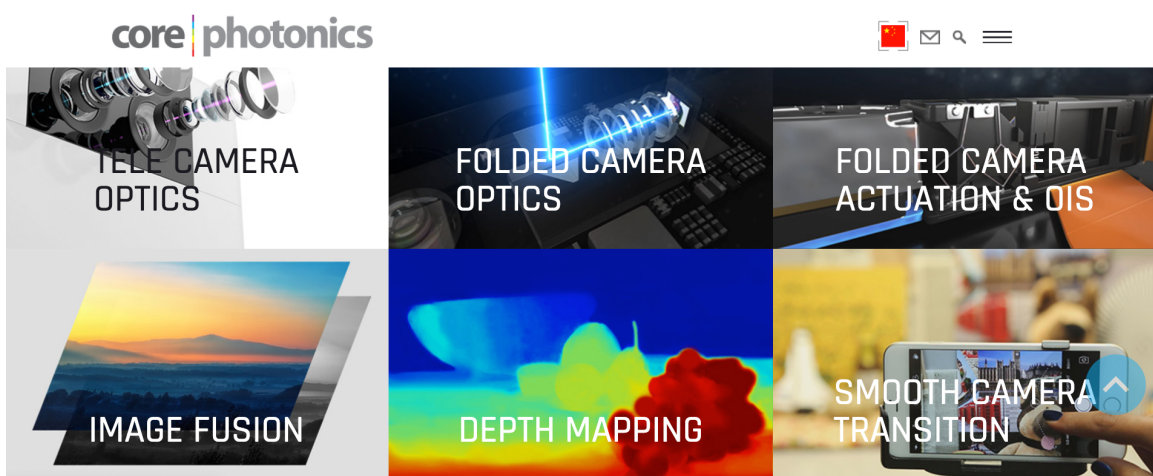
on phones with single-aperture cameras was achieved by digitally manipulating the image data captured by the camera to generate a “zoomed” photo.

6. A significant drawback to the conventional technique was that the “zoomed” photo had poor image resolution (because, essentially, the smartphone’s processor and software was just magnifying a portion of a captured image to approximate the effect of a zoomed-in image). With Corephotonics’ dual-camera system, the second telephoto camera provides much higher optical resolution than the first wide angle camera, and the imaging data from the telephoto camera can be combined with imaging data from the wide angle camera to create an effectively greater level of zoom without degrading image quality.

7. Corephotonics also developed an image processing techniques for video that minimized the transition jump (e.g., in recorded video or in a camera viewfinder) in a video stream when the video switched between one camera and another during zooming up or down. Corephotonics also developed, for still images, an image fusion technique that combined image data from two cameras to create an improved, higher quality, and higher resolution image than would otherwise be possible with one camera.

8. Corephotonics now employs 80 staff, the majority of whom are engineers, scientists, and technologists, who continue to develop Corephotonics' innovative camera technologies for mobile devices and explore new applications for its technologies.

9. Currently, Corephotonics's core technologies can be divided into six categories: (1) tele camera optics; (2) folded camera optics; (3) folded camera actuation and optical image stabilization; (4) image fusion between multiple imagers; (5) depth mapping, (6) smooth camera transition; and (7) collapsible compact cameras allowing large sensors with compact form in smartphones. (not public). Public information about these technologies is available on Corephotonics's website, at <https://corephotonics.com/inventions/> (accessed Jan. 27, 2021):



10. Corephotonics has filed for and received numerous patents for its advanced lens designs, multi-camera systems, and optical image processing techniques. Over 190 granted or allowed (in at least 8 countries) and over 160 additional filed. Corephotonics today continues to develop multi-aperture camera and image processing technologies and has filed for and obtained patents on those technologies as well.

Corephotonics' Technology Widely-Recognized as Innovative and Valuable

11. Part of Corephotonics' business involves the licensing of its technology to customers in mobile device/smart phone space. Since 2014, Corephotonics has successfully licensed its technology to numerous smartphone OEMs and component manufacturers.

12. [REDACTED]

13. In 2015-2016, Corephotonics signed technology licenses with multiple companies, including: [REDACTED]; [REDACTED]; (2) Samsung Electro-Mechanics Co., Ltd. ("SEMCO"); (3) OPPO Mobile Telecommunications Corp., Ltd. ("OPPO"), a leading handset designer and manufacturer based in China; [REDACTED]

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