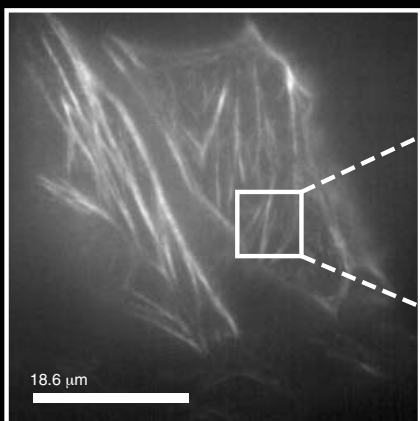


Localization microscopy images of actin bundles taken by the ORCA-Flash4.0 scientific CMOS camera

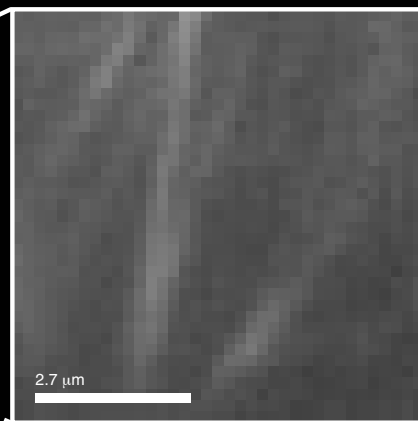
Widefield fluorescence microscopy has been and remains an essential tool for understanding complex biological processes. And, as the questions biologists are asking have moved more and more towards the molecular level, overcoming the diffraction limit of light microscopy (about 200 nm) has become increasingly important. Over the past several years advances in localization or "super resolution" microscopy have been opening doors to visualizing and measuring cellular structures with unprecedented detail.

For lack of a better choice EMCCDs have been widely used as the detector in most localization microscopy systems. But now there is a better choice. Hamamatsu's Flash series of sCMOS cameras have demonstrably improved the precision of super resolution imaging. Our latest in the series, the ORCA-Flash4.0, is ideally suited for this challenging application. The increased signal to noise ratios and ideal pixel size of this camera offer more precise data resulting in an increase in localization precision.

Conventional imaging

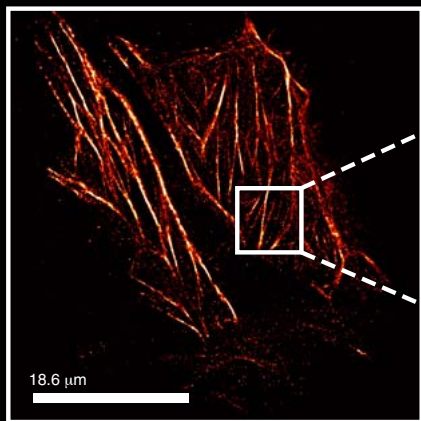


▲ A stack of image frames was used to construct the TIRF images

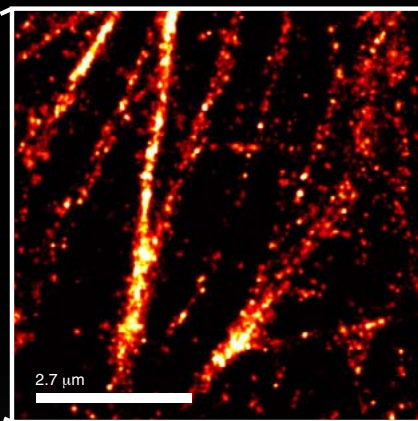


▲ Magnified image. The actin bundles become indistinct.

Super-resolution imaging



▲ The reconstructed super-resolution image

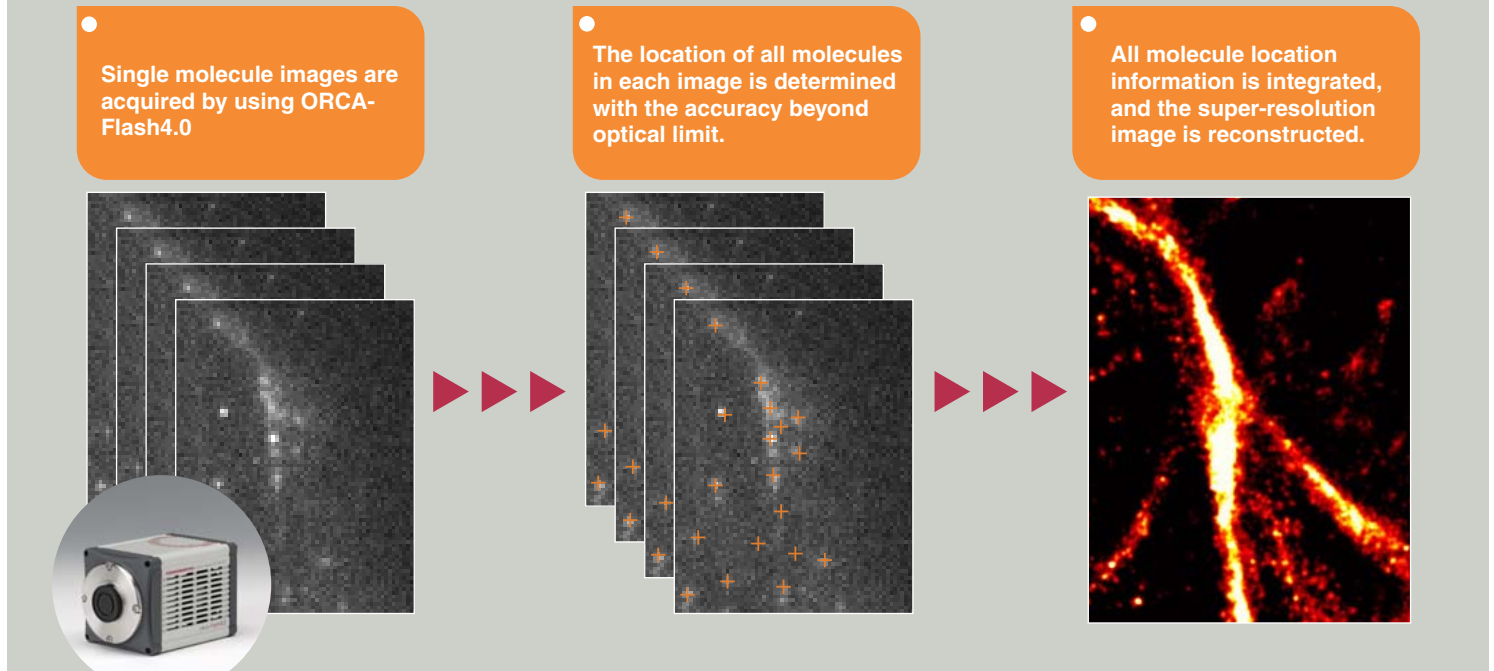


▲ Magnified image. The actin bundles can be clearly observed.

- Sample: HeLa
- Fluorophore: d2EosFP
- Optics: TIRF
- Lens: 100x (0.35x relay lens)
- Collaborator: Prof. Zhen-li Huang, Huazhong University of Science and Technology



Flow of super-resolution image acquisition using ORCA-Flash4.0



Please visit the website to watch the ORCA-Flash4.0 super-resolution movie.



"life science camera" "movie gallery"

Search

URL http://www.hamamatsu.com/all/en/community/life_science_camera/movie_gallery/index.html

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HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Systems Division

812 Joko-cho, Higashi-ku, Hamamatsu City, 431-3196, Japan, Telephone: (81)53-431-0124, Fax: (81)53-435-1574, E-mail: export@sys.hpk.co.jp

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, N.J 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8 E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saulu Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777 E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6 20020 Arese (Milano), Italy, Telephone: (39)02-93581733, Fax: (39)02-93581741 E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: B1201 Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

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