

Presentation

«The Nobel Prize in Chemistry 2014: fluorescence microscopy.»

prepared a 2nd year students

group 5301

Natural Sciences faculty

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And Svetlana Baklanova

Nobel Prize in Chemistry was awarded to Eric Betzig, Stefan W. Hell and William E. Moerner for fluorescence microscopy studies.

Scientists awarded for the solution of a problem, but by two different methods: Hell has developed the so-called STED-microscopy and Betzig and Moerner - single-molecule microscopy.

Method of fluorescence microscopy -
painting objects with special non-toxic
substances capable of light when
irradiated with ultraviolet rays.

This method gave better resolution than
visual.



Eric Betzig

Born: 1960, Ann Arbor, USA

Affiliation at the time of the award:

Janelia Research Campus, Howard

Hughes Medical Institute, Ashburn, USA

Prize motivation: "for the development of super-resolved fluorescence microscopy"

Field: physical chemistry



Stefan W. Hell

Born: 1962, Arad, Romania

Affiliation at the time of the award:

Max Planck Institute for Biophysical
Chemistry, German Cancer Research
Center

Prize motivation: "for the development of
super-resolved fluorescence microscopy

"Field: physical chemistry



William E. Moerner

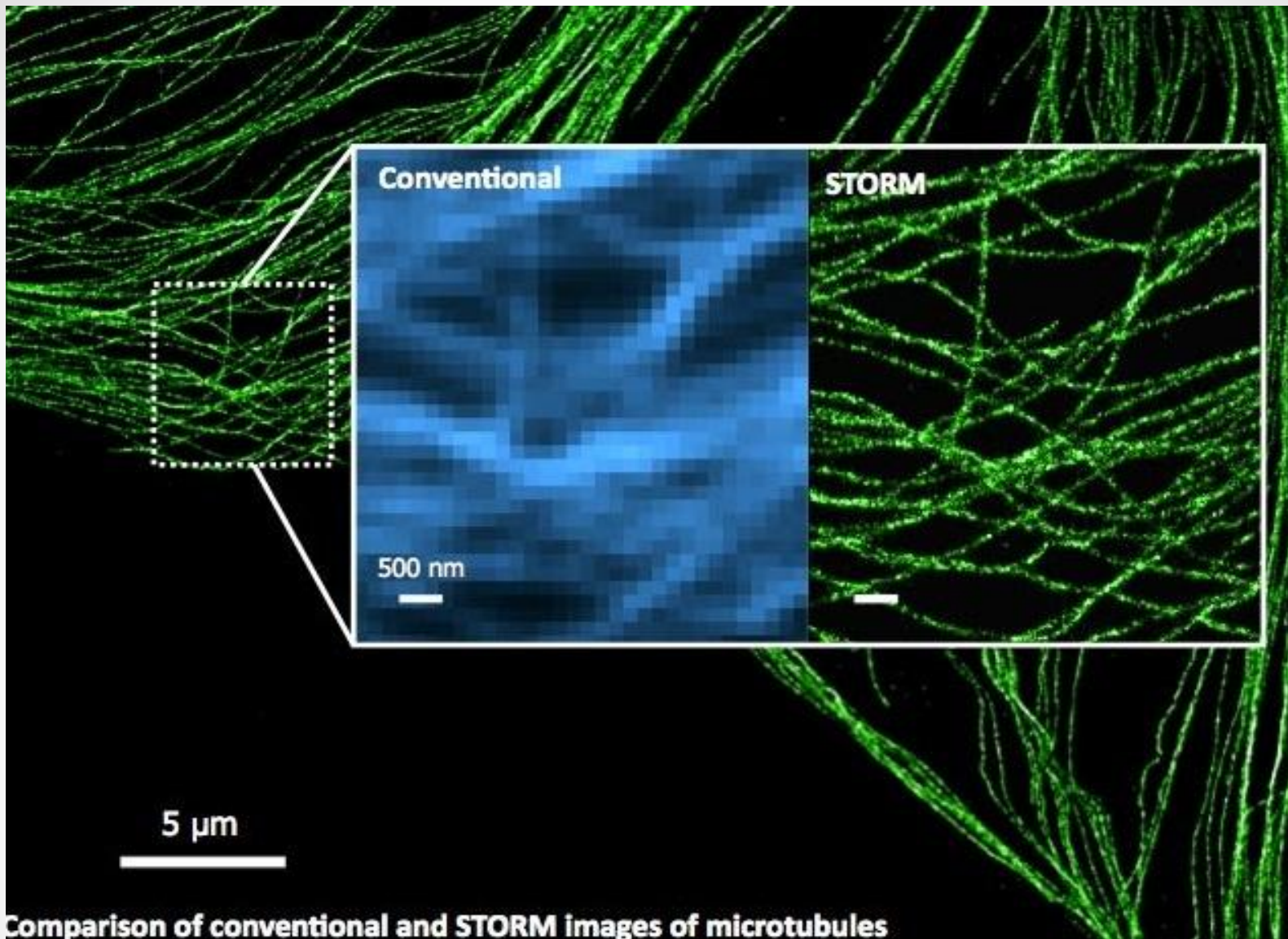
Born: 1953

Affiliation at the time of the award:

Stanford University, Stanford, CA,
USA

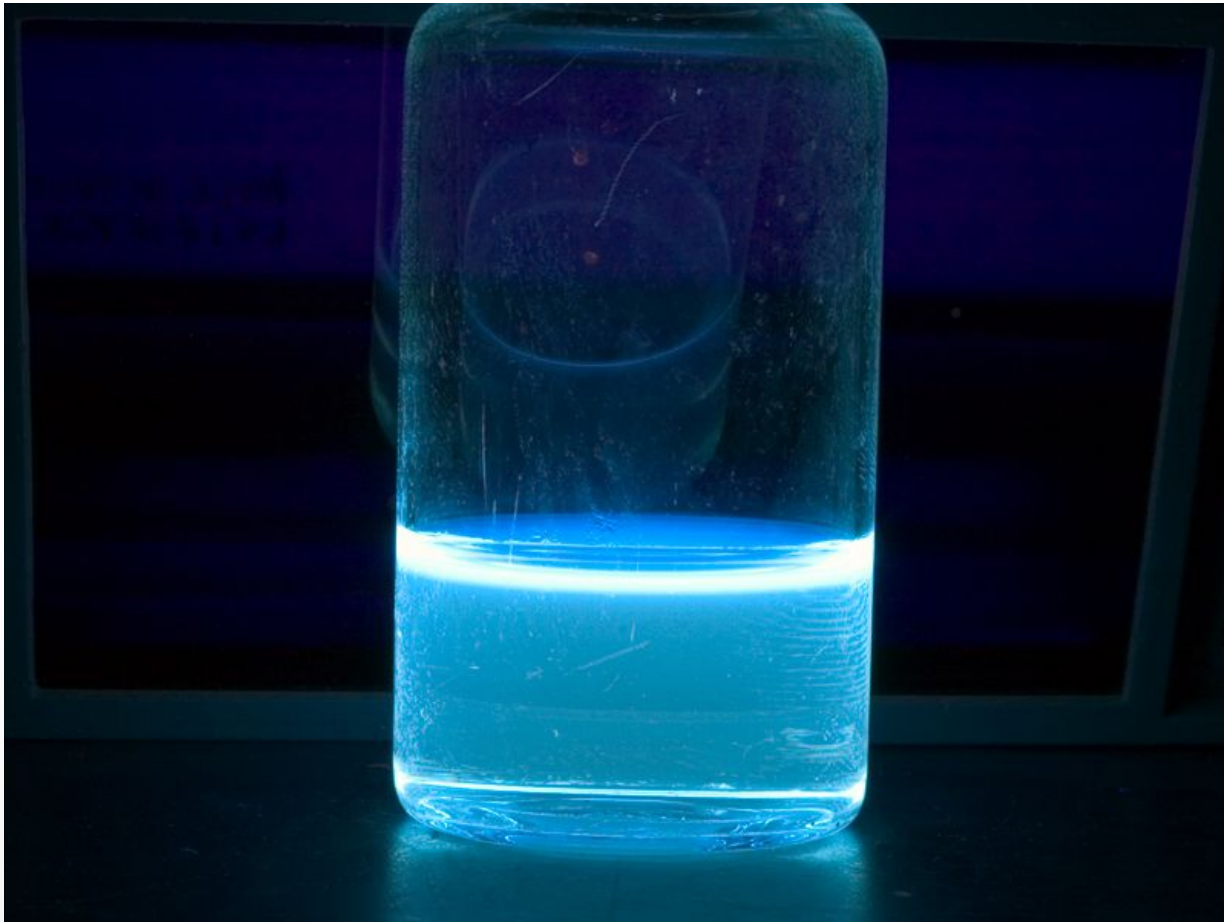
Prize motivation: "for the development
of super-resolved fluorescence
microscopy"

Field: physical chemistry



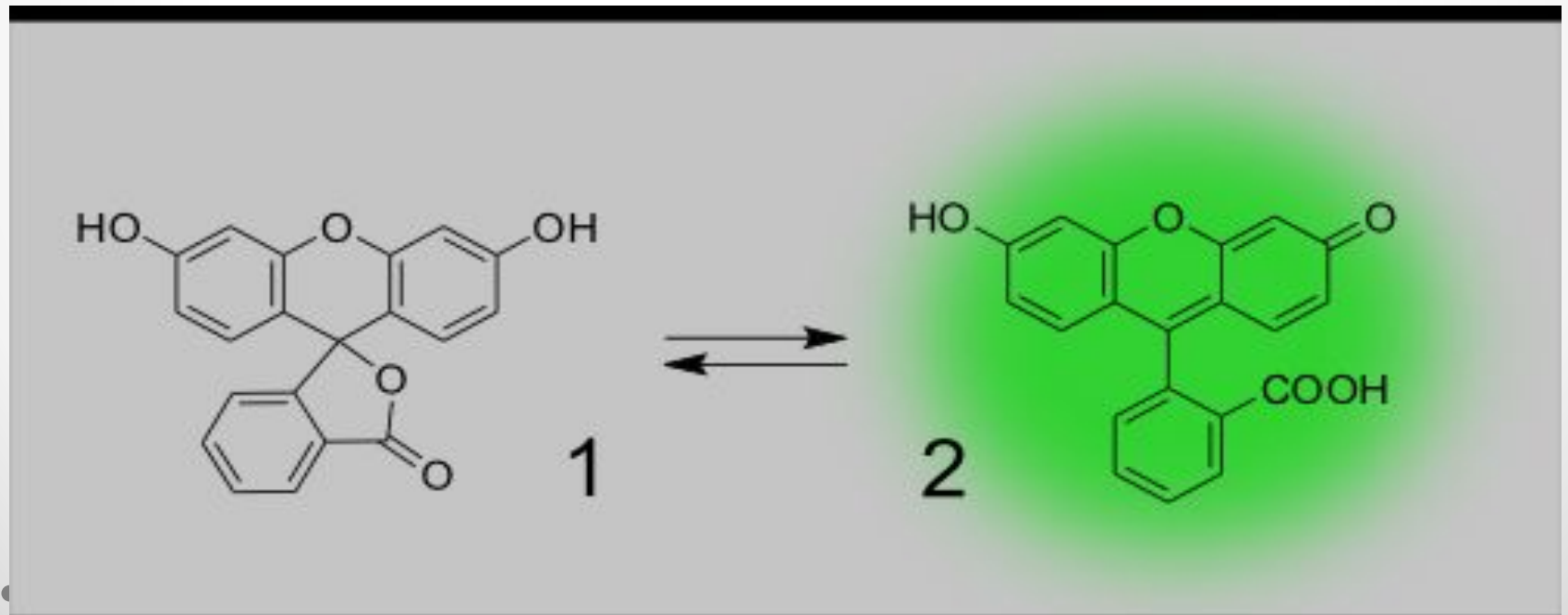
(Вид микротрубок в оптический микроскоп и с помощью флуоресцентной микроскопии.)

Scientists invented and synthesized various molecules that are "attached" to the protein and when exposed to ultraviolet radiation emit visible light.



quantities, so that scientists can trace which molecule is involved in various processes.

Active and inactive proteins have slightly different formulas that scientists can observe the activation of proteins.



Mouse after the action method of fluorescence microscopy



Scientists with fluorescence microscopy
technique and technical innovations
were able to overcome the inviolable
laws of nature and use it in medicine and
science.

In his presentation, we used
material from these sources:

<http://neochapay.livejournal.com/346075.html>

<http://gigamir.net/techno/pub1156577>

<http://www.nobelprize.org/>

Thank you for your
attention!!!