

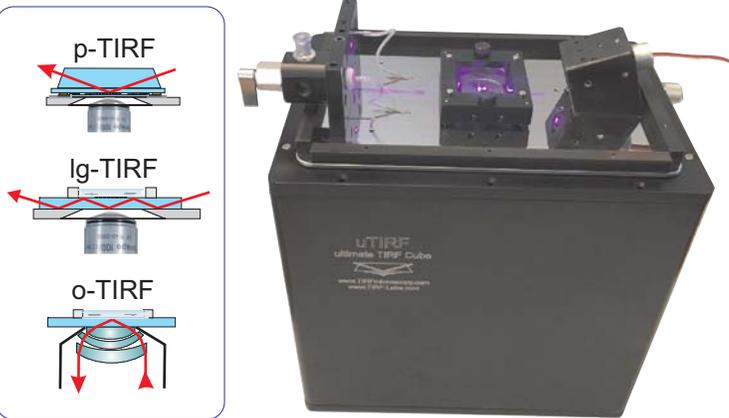


## uTIRF Cube - Ultimate TIRF Microscopy Station

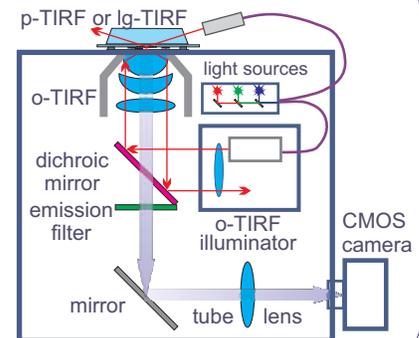
uTIRF consists of prism-, lightguide-, and objective-based TIRF; 4X, 40X, and 60X objectives; low light CMOS camera; and 465/532/638 nm illuminator

### Applications

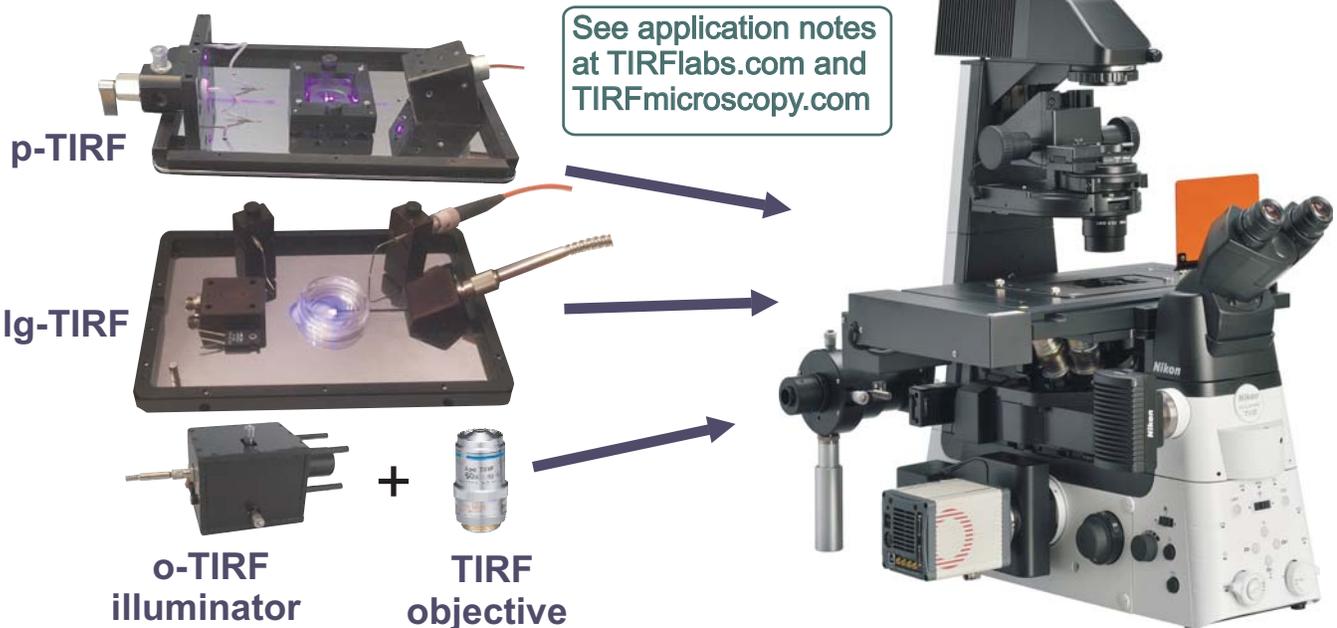
- Single molecule detection
- Super resolution microscopies
- Assay development
- Real-time microarrays
- Electro-Chemi-Luminescence
- TIRF-Electrochemistry
- TIRF-Dielectrophoresis



### uTIRF optical scheme



Use the uTIRF turnkey station, or take prism-, lightguide-, and objective-TIRF as accessories for your microscope

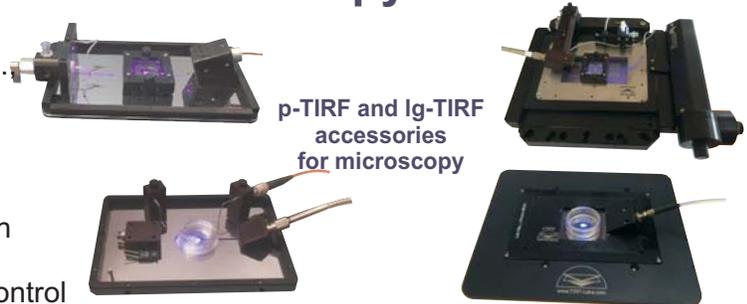


uTIRF - ultimate TIRF Microscopy Station



## Prism- and Lightguide-based TIRF Microscopy Accessories

- Single molecule detection
- Super-resolution microscopy: STED, PALM, STORM, ...
- Minimal stray light, crisp, high-contrast TIRF images
- Work with dry, water-, and oil-immersion objectives
- Use UV or visible excitation light 190-900 nm
- Use Petri-dish, open perfusion, or closed flow chamber
- Nested design - fits inside 96-well plate, K-frame, 4-inch round, or manual XY stages
- Optional temperature, dielectrophoresis, electric field control



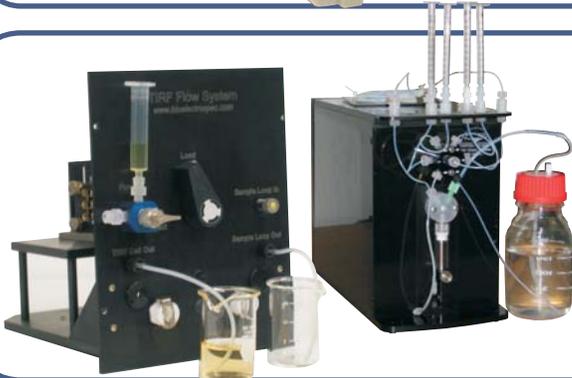
p-TIRF and Ig-TIRF accessories for microscopy



## Turnkey Single Molecule Detection TIRF Microscopy Station

### Modular TIRFM stations include:

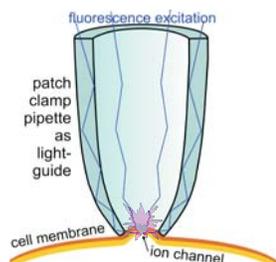
- Fluorescence microscope
- Ig-, p-, or/and o-TIRF microscopy flow systems
- Low light EM CCD or sCMOS camera
- Multi-color computer-controlled illuminator
- Digital fluidics SmartFlow
- Optional temperature and electric field control
- Software for instrument control and data analysis



## TIRF Accessories for Fluorometers

- **TIRF Accessory TA-1004** transforms a spectrofluorometer into a super-sensitive TIRF biosensor instrument
- Optional electrochemical, DEP and temperature control
- **SmartFlow** Fluidic System allows to run unattended TIRF experiments, measure sensograms to derive  $k_{on}$  and  $k_{off}$
- Microfluidic system allows for handling nanoliter volumes

## Single ion Channel Single Molecule Detection



pipette tip transmittance and excitation

pipette tip excitation only



SC-SMD on microscope stage

Patch clamp technique combined with fluorescence single molecule detection

## iDiagnostics

### cellphone based molecular diagnostics

Real-time TIRF microarrays:  
 Parallel supersensitive detection of protein, nucleic acid, and metabolite biomarkers



We extended TIRF into the 3<sup>rd</sup> dimension and invented iDiagnostics  
*Now you can hold a hospital laboratory in the palm of your hand*