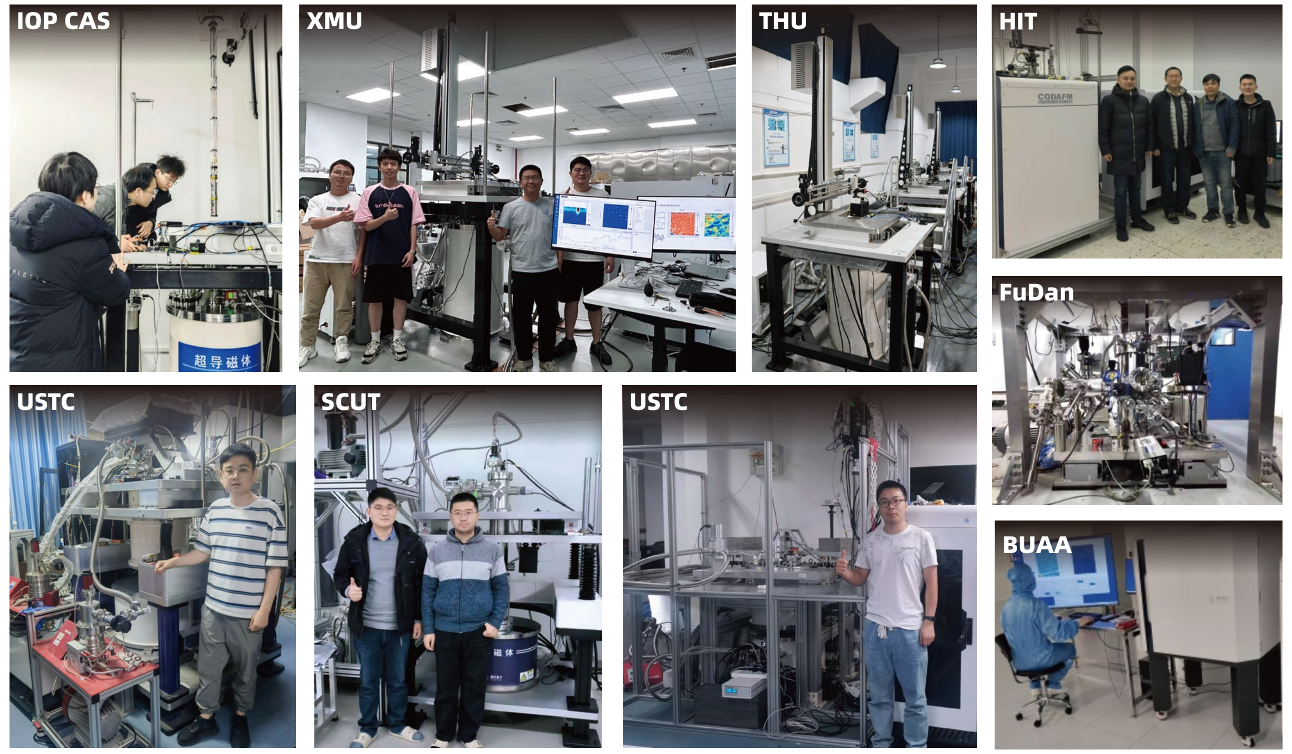
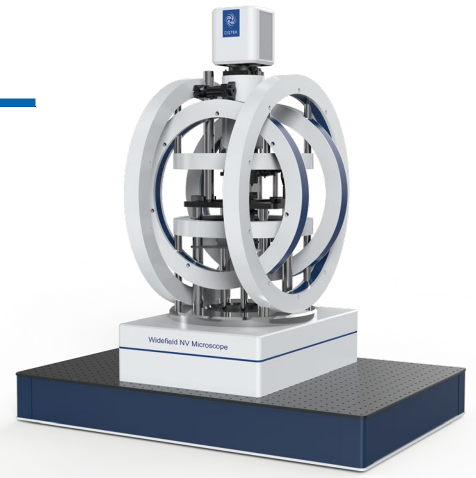
User Cases

User	Research
Tsinghua University	Skyrmions ,Topological insulators
City University of Hong Kong	Quantum Materials, Applied Physics
Peking University	Biomagnetism
Institute of Physics CAS	Superconductor, Spin magnetism
University of Science and Technology of China	Scanning NV magnetometry
South China University of Technology	Magnetic Materials, Oxide thin films
Fudan University	SPM, Nano-magnetism, Magnetic structure
Beihang University	Spintronics, Nonvolatile memory
Hebei University of Technology	Magnetic materials applied in electricity
Sun Yat-sen University	Superconductor, Topological material
Harbin Institute of Technology	Micromagnetic structure
Xiamen University	Nano optics, Raman spectrum
Hubei Normal University	Public laboratory facility



Widefield NV Microscope



Widefield NV Microscope is based on the principles of nitrogen-vacancy (NV) center optically detected magnetic resonance (ODMR). It features high spatial resolution, large field of view, large dynamic range for detecting magnetic fields, and fast imaging speed.

Parameters

Magnetic Sensitivity	≤ 5 μT/Hz$^{1/2}$	*Spatial Resolution*	~ 900 nm	*Pixels*	2048*2048
Field of View	≥ 1 mm*1 mm	*Dynamic Range*	100 nT ~ 10 mT	*Magnetic Field*	0-20 Gauss

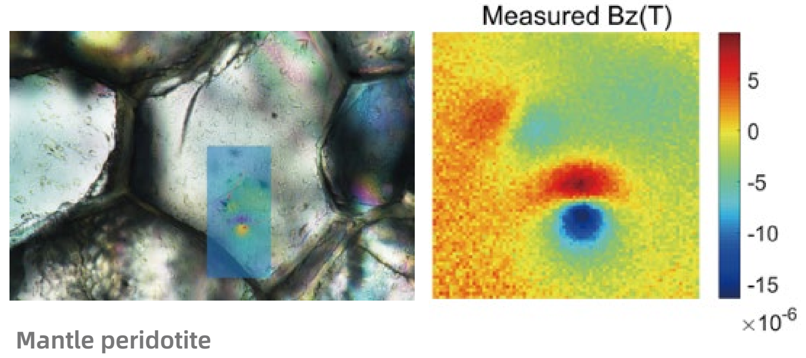
Supports Magnetic Imaging and Optical Imaging

Capable of Reconstructing Magnetic Moments Distribution

Intelligent Data Processing Software with GPU Algorithms

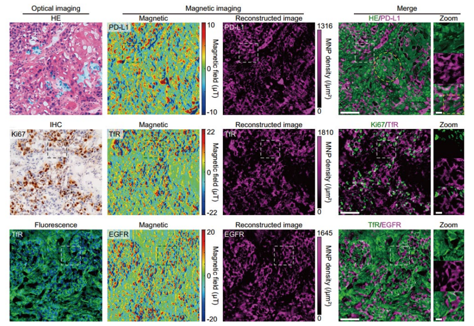
Applications

Paleomagnetism



Mantle peridotite

Biomagnetism



Tumor Tissues

PNAS 119(5),e2118876119 (2022)

V - 2024 . 06

E2 Building, Innovation Industrial Park II, High-tech District, Hefei, Anhui, China.

+86-551-62835225 *www.ciqtekglobal.com* *info@ciqtek.com*

CIQTEK

Succeed End Users, Succeed Fellow Travelers

CIQTEK

Scanning NV Microscope

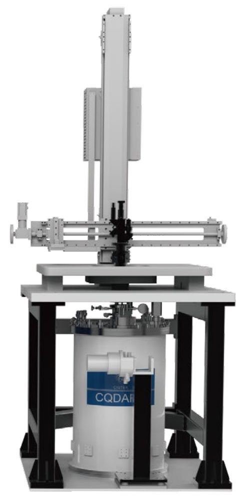
Nanomagnetic imaging microscope

www.ciqtekglobal.com

Scanning NV Microscope

The Scanning NV Microscope is a quantum precision measurement instrument that combines optically detected magnetic resonance (ODMR) of diamond nitrogen-vacancy centers with scanning probe technique. It can be applied to the research of spintronics, multiferroic, 2D magnetic material, superconductor and so on.

Scanning NV Microscope



Cryogenic Scanning NV Microscope

Parameters

Specifications	SNVM（RT）	SNVM（Cryogenic）
Magnetic sensitivity	≤2 μT/Hz$^{1/2}$	≤5 μT/Hz$^{1/2}$
Spatial resolution	10-30 nm	10-30 nm
Temperature range	300 K	2 K-300 K
Main functions	Contour magnetic imaging mode, Quantitative magnetic imaging mode, Pulse imaging mode, MFM mode,	
Magnet options	0-50 mT	1/1/1 T、3/3/3 T、9/1/1 T

Key components

Probe design

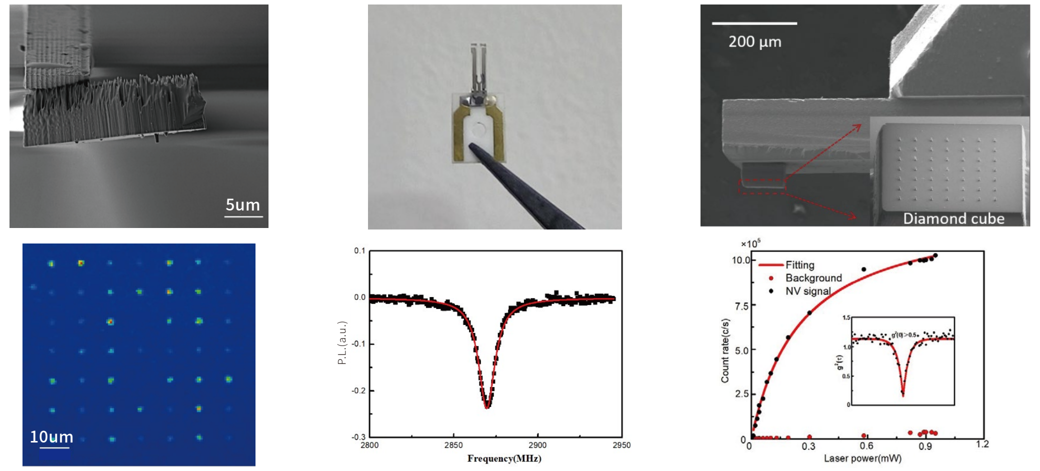
- Small and compact
- High strength
- Load capacity
- Strong earthquake resistance

Optical design:

- Simple to use
- Easy to expand
- High fluorescence collection efficiency
- Wide field of view

NV Probe

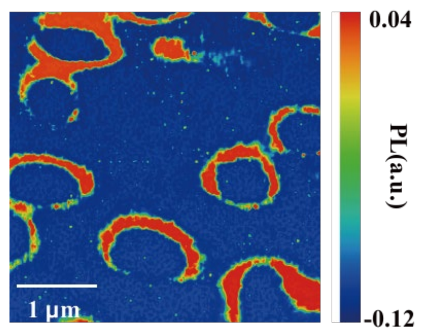
- Scanning NV probe with arrays of nanopillars or with single pillar
- Count rates: ≥300 kc/s
- Contrast: ≥20%



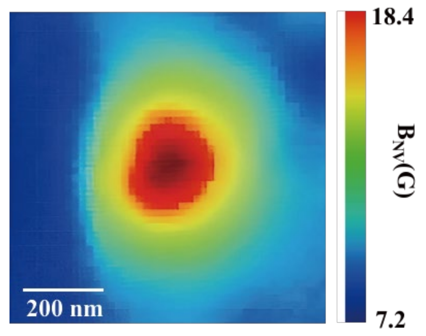
Physical depiction, SEM image, fluorescence image, and property characterization image of NV probes

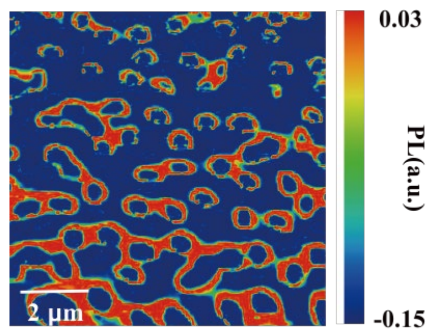
Applications

Superconductor

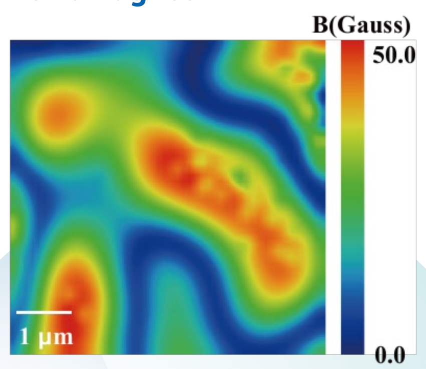


YBCO@60 K

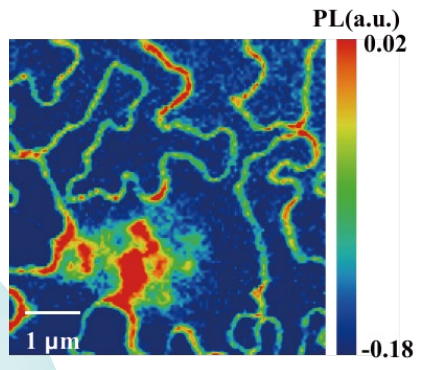




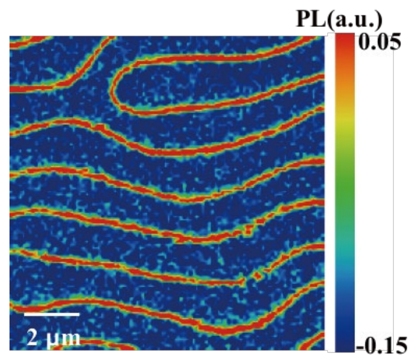
Ferromagnet



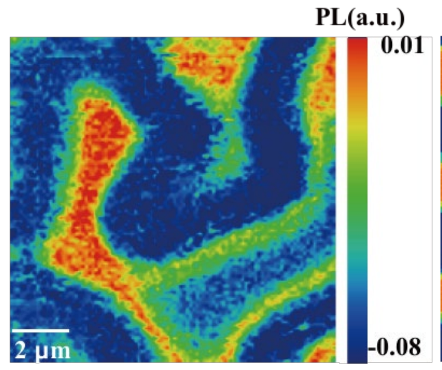
Magnet



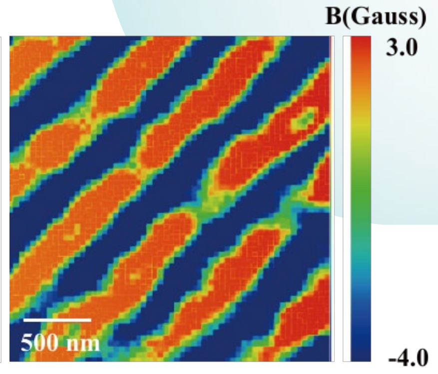
Pt/Co/Ag



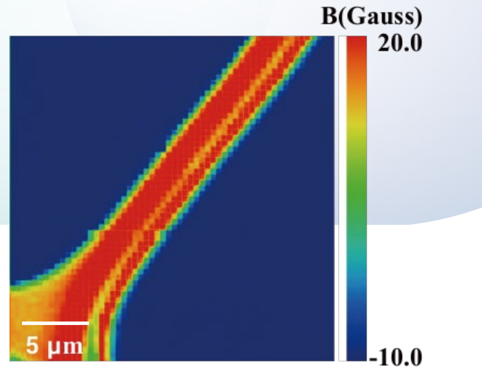
$TmFeO_3$



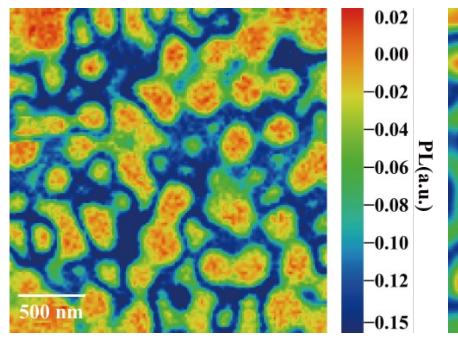
CoFeB（2 K）



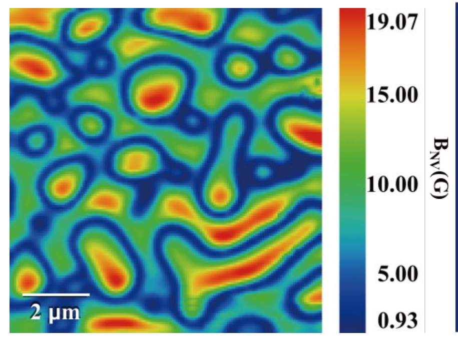
Ferrite



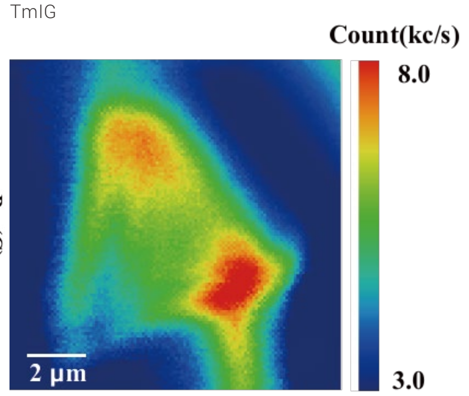
TmIG



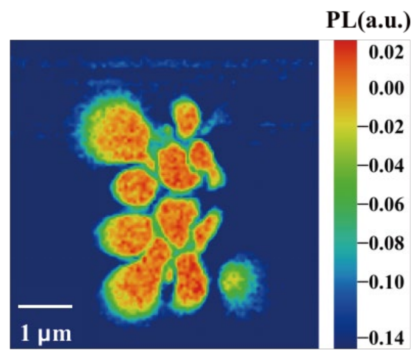
LSMO



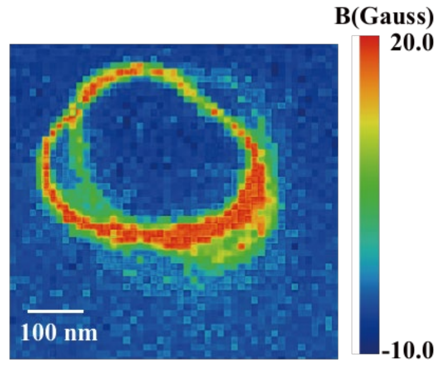
YIG



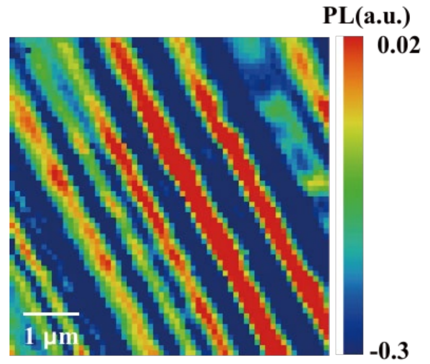
MoS_2(2 K, 2 T, X axis)



micromagnet(Fly mode)

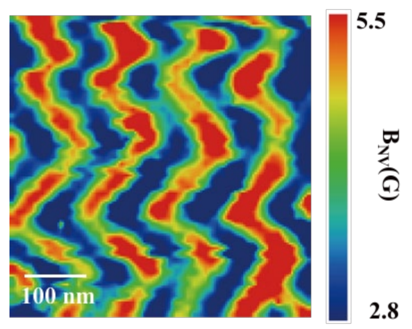


CoFeB



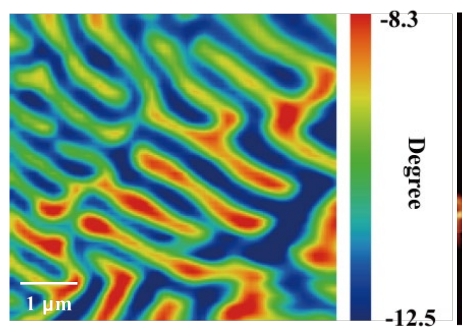
magnetic disk

Antiferromagnetic



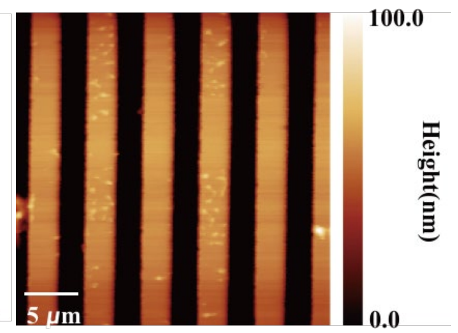
BFO

MFM mode



FeSi@4.2 K

AFM mode



Optical grating