

# Career Opportunities of Nuclear Technology and Applications Division

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# Introduction

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- **Our mission:** Nuclear Technology and Applications Division (NTAD) is an application-oriented, non-profit R&D affiliation of the IHEP, aiming at technology transfer and product industrialization
- **Our areas:** Medical imaging devices for pre-clinical research and diagnosis, irradiation accelerators, industrial CT, radiation safety monitoring, low-toxic tumor therapy nano-medicine, etc.



Beijing office



Jinan Laboratory

# Introduction

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## **Staff and graduate students: 126 in total**

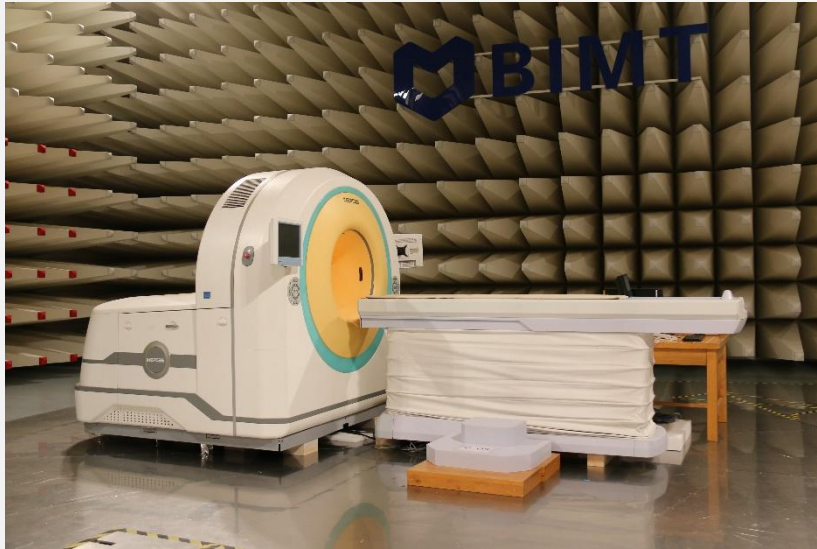
- Full-time faculties: 58
- Post doctorate: 9
- Graduate students: 56
- Others: 3

## **Our focus: device and technology for:**

- Imaging for clinic diagnosis and life science
- Nondestructive testing (NDT) for industry and laboratory
- Radiation safety monitoring
- Advanced compact accelerator

# Our Achievements

Imaging devices for diagnosis  
and pre-clinical research



Positron Emission Tomography (PET)



Positron Emission Mammography  
(with CFDA registration)



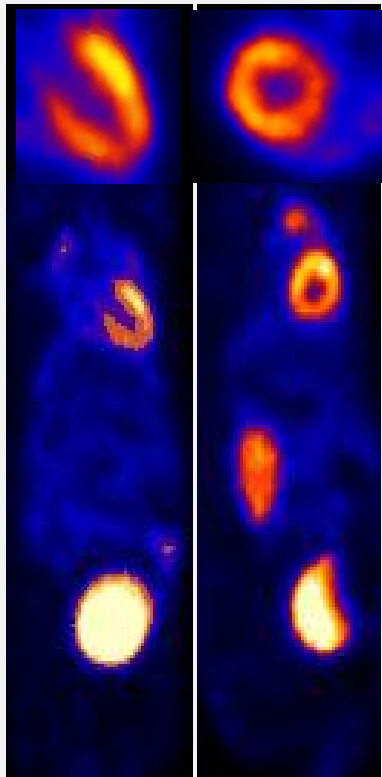
Whole-body PET/CT  
for small animals



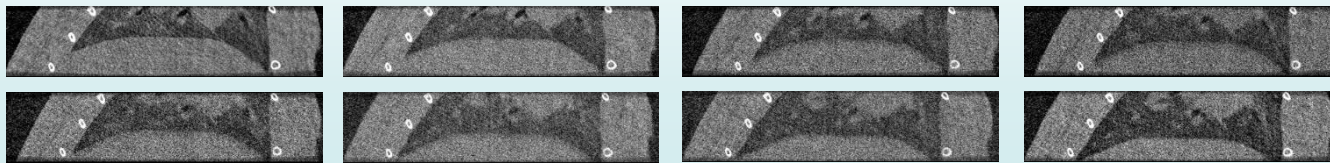
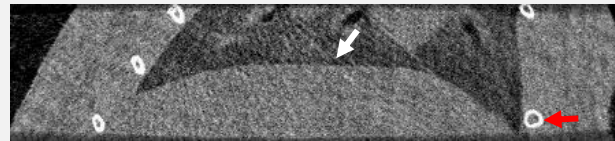
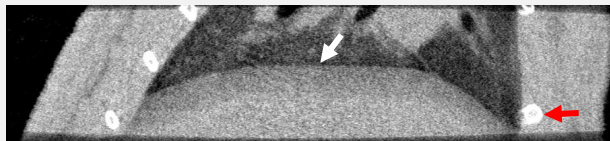
Spectral CT for small animals

# Our Achievements

## Gated PET/CT technique for lung and heart 4D imaging

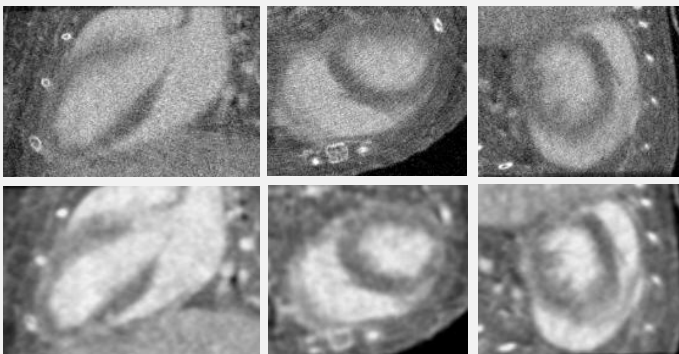


cardiac gated PET scan

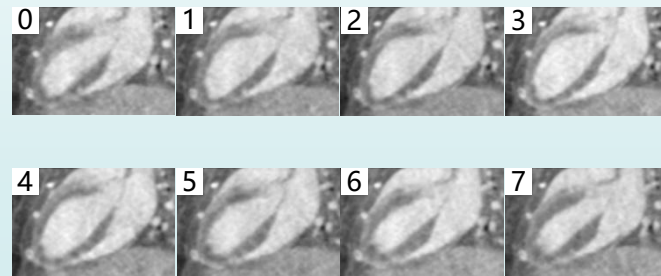


normal CT scan

respiratory gated CT scan



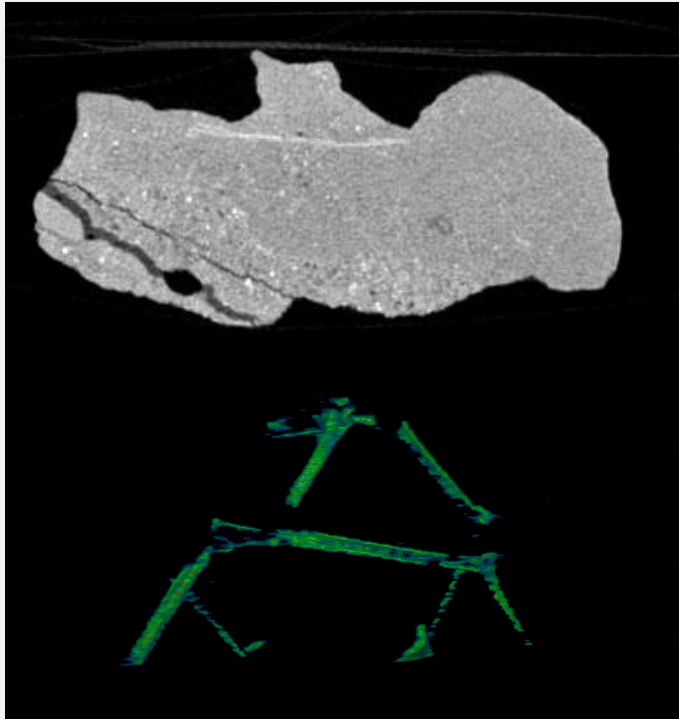
cardiac gated CT scan



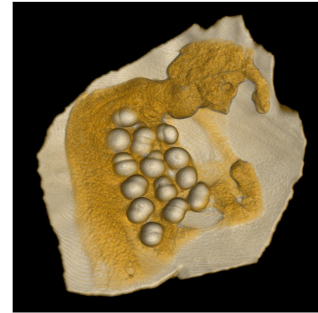
different periods in a cardiac cycle

# Our Achievements

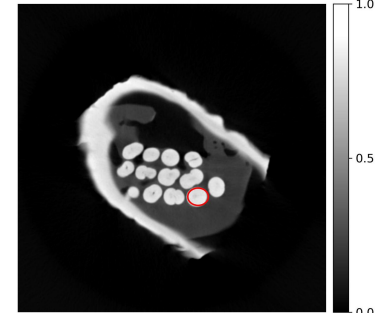
## Photon counting spectral CT material decomposition and analysis



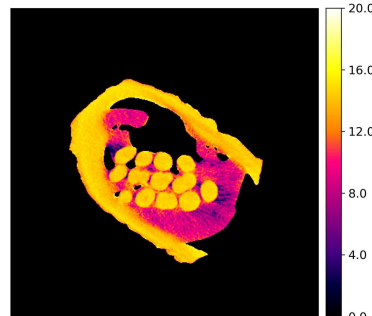
**fossil bone extraction from the rock**



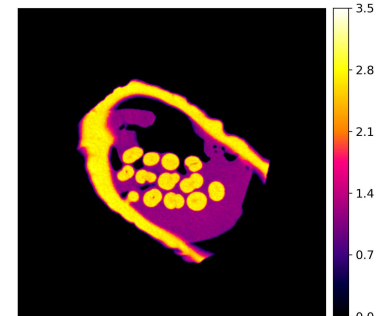
(a) 3D image



(b) [45-75]keV



(d) Effective atomic number



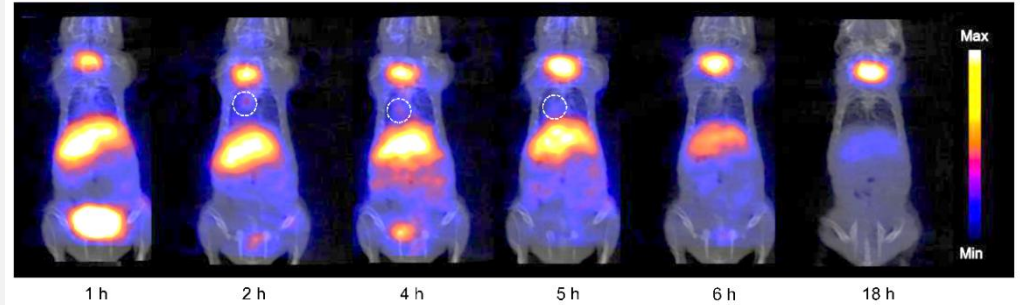
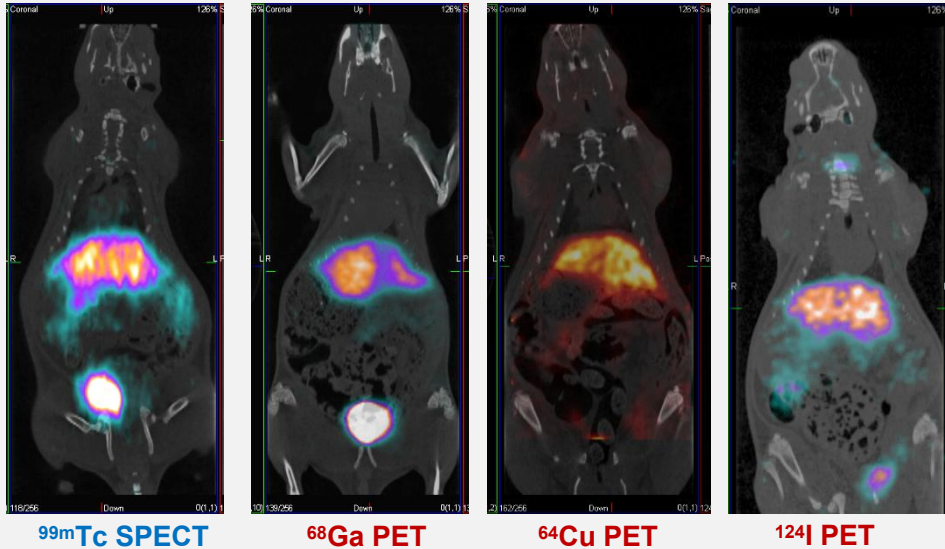
(e) Mass density (g/cm<sup>3</sup>)

**quantitative analysis of pearls**

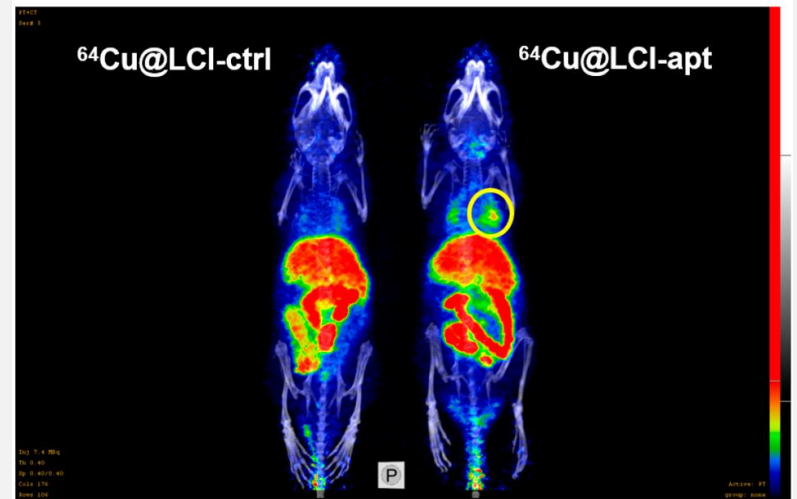
# Our Achievements

Molecular probe  
developing

Rat PET and SPECT imaging



Rat lung cancer PET imaging



Nude mouse lung cancer PET imaging

# Our Achievements

## CT equipment commercialization



computed laminography  
for IGBT



锐影检测科技(济南)有限公司  
*Ray Image Testing Technology (Ji Nan) Co. Ltd.*

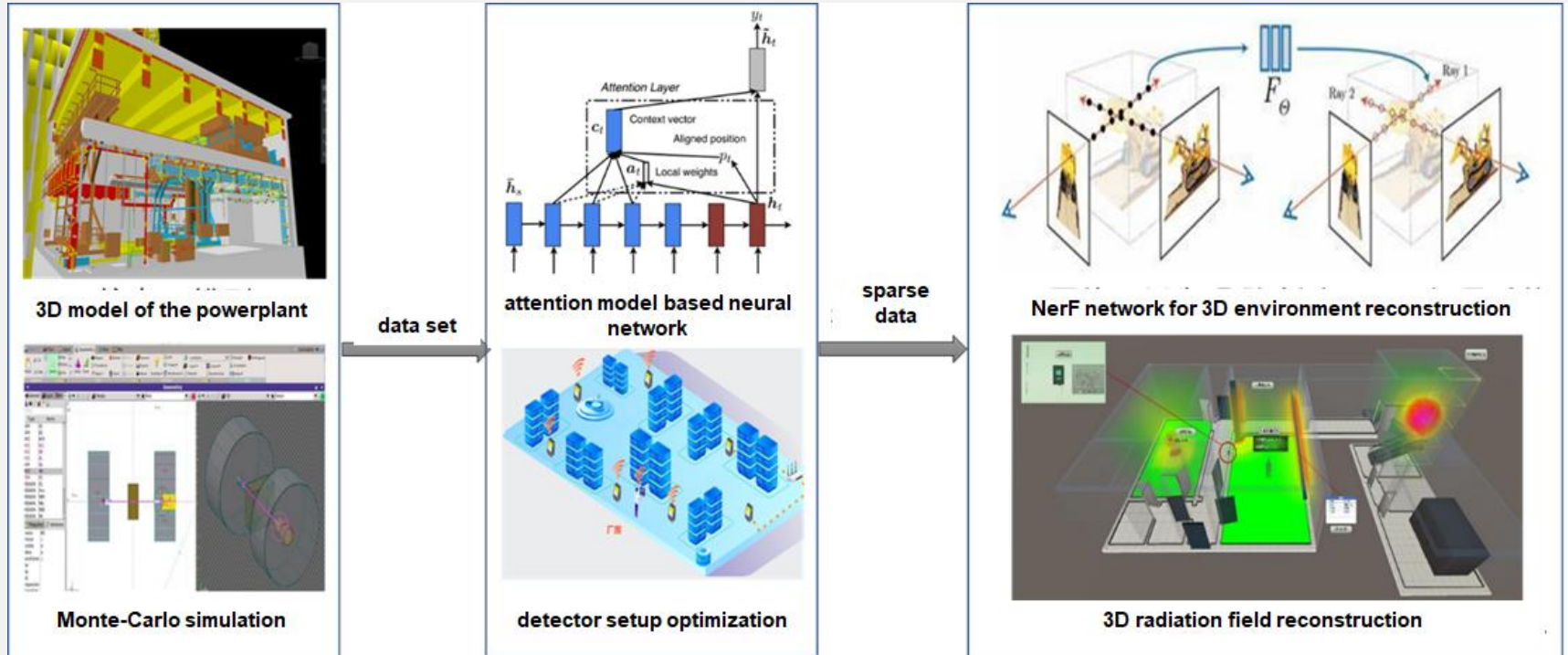


industry CTs ready for delivery



# Our Achievements

## Radiation safety monitoring solution



AI-based 3D radiation field reconstruction

# Our Achievements

## Radiation safety monitoring solution



virtual roaming in nuclear powerplant with image fusion of optical and radioactive signals

# Our Achievements

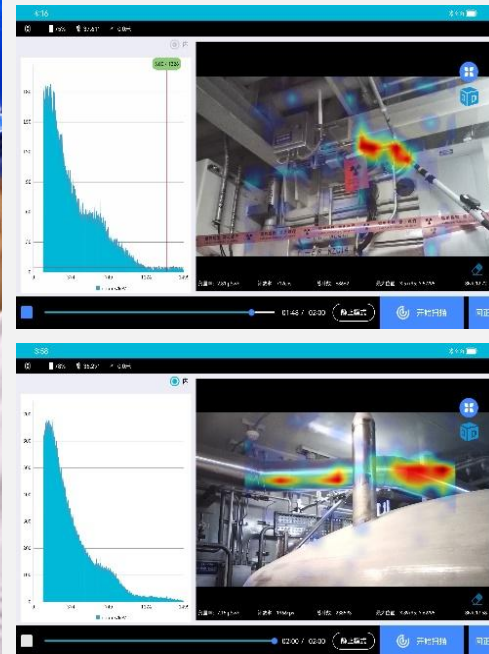
## Radiation safety monitoring solution



pipeline radiation monitoring



radioactive chemical leakage  
detection and analysis



# Our Achievements

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**Serialized and commercialized dosimeter products**

**radiation probes**



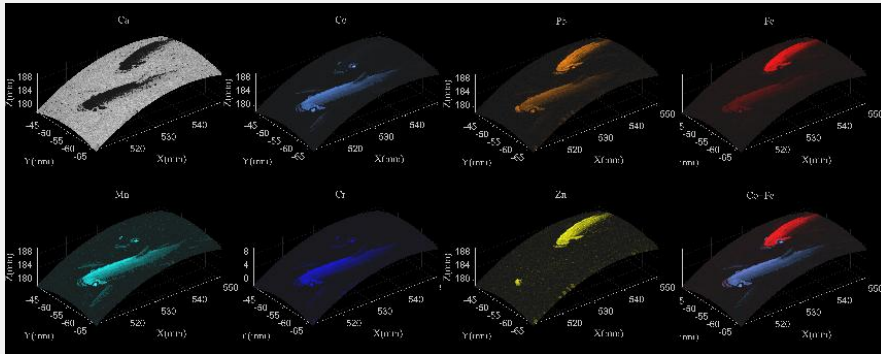
**personal radiation dosimeters**



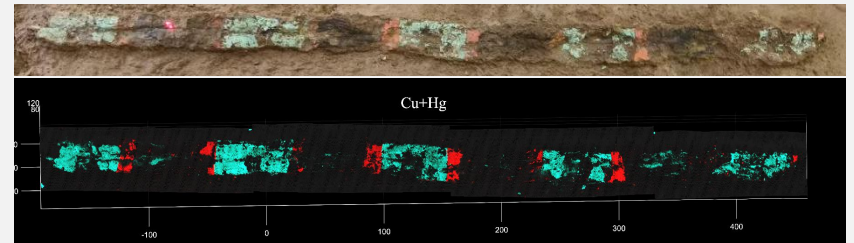
**stationary radiation detectors**

# Our Achievements

## Robotic XRF for archeology and cultural heritage study



glaze chemical component analysis



ceremonial relic on-the-spot scanning

# Our Achievements

## Compact accelerators



**L-band 10MeV industrial  
irradiation accelerator**



**S-band 10MeV industrial  
irradiation accelerator**



**6MeV accelerator  
X-ray source**



**9MeV accelerator  
X-ray source**

# Position Description

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- **Opening:** Professor
- **Research area:** Nuclear medical imaging technology
- **Professional background requirements:**
  1. Professor or equivalent rank
  2. Experienced in PET/SPECT algorithm or instrumentation

# Position Description

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- **Opening:** Associate professor
- **Research area:** Nuclear medical imaging technology
- **Professional background requirements:**
  1. Associate professor or post doctorate experience abroad
  2. Experienced in PET/SPECT algorithm or instrumentation



# Position Description

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- **Opening:** Associate professor
- **Research area:** Radiation detector and system R&D
- **Professional background requirements:**
  1. Associate professor or post doctorate experience abroad
  2. Experienced in advanced radiation detector R&D

# Position Description

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- **Opening:** Post doctorate
- **Research area:** X-ray imaging technology
- **Professional background requirements:**
  1. 1) CT imaging theories, including reconstruction and data correction or 2) frontier basic research of physics and mathematics
  2. Innovative technology research of static CT and spectral CT, their applications in industry and medicine

# Position Description

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- **Opening:** Post doctorate
- **Research area:** Nuclear detection and imaging
- **Professional background requirements:**
  1. Nuclear detection technology research and detection system development
  2. Majoring in physics, nuclear science and technology, biomedical engineering; being familiar with particle physics and nuclear physics
  3. Good communication and cooperation

# Position Description

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- **Opening:** Post doctorate
- **Research area:** Molecular probe
- **Professional background requirements:**
  1. Frontier research of chemistry of radioactive medicine
  2. Diagnosis and treatment dual-purpose radioactive probe design and synthesis

# Position Description

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- **Opening:** Post doctorate
- **Research area:** Accelerator technology and application
- **Professional background requirements:**
  1. Advanced accelerator technology research and application
  2. Majoring in accelerator physics, accelerator technology and other relative area
  3. Experienced in accelerator system and key component R&D

# Welcome to join us!



**Dr. Wei, Cunfeng, Director of NTAD**

**Email: [weicf@ihep.ac.cn](mailto:weicf@ihep.ac.cn)**