



Warmly welcome to Huizhou in 2026

IMP new campus in Huizhou, Guangdong



**Institute of Modern Physics (IMP),
Chinese Academy of Sciences (CAS), China**



Outline



- **IMP brief introduction and Linac accelerator activities at IMP**
- **Huizhou brief introduction**
- **Organizing and preparation for LINAC2026**

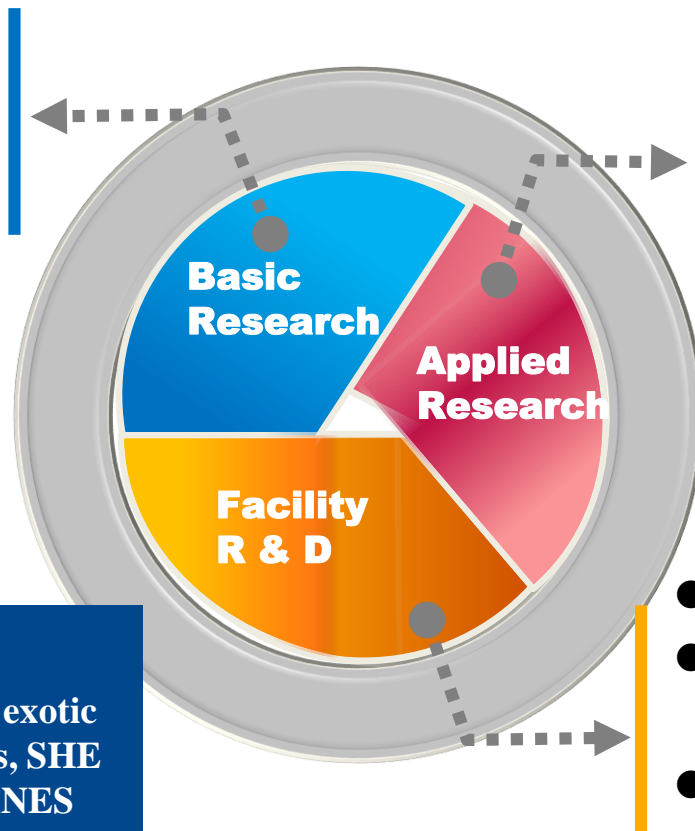


IMP Brief Introduction



IMP is the biggest nuclear physics research center in China for heavy ion basic-science and nuclear technology application

- Nuclear physics
- Atomic physics
- Nuclear chemistry
- Radiation chemistry
- Material science
- Hadron physics
- High Energy Density physics
- Accelerator physics



- Radiation biology
- Radiation medical science
- Radiation material
- Advanced nuclear energy
- Nuclear-detector technology

- Ion Accelerator
- Large-scale experiment facilities
- Special experiment facilities

High Priorities at IMP

- Precision mass measurement of exotic and stable nuclides, RIB physics, SHE
- CIADS and HIAF project, ADANES
- Tumor therapy
- Irradiation Material sciences

- 900 staff+450 students
- 1.0 B RMB Yuan/per year since 2018



IMP Existing Facility: HIRFL



Heavy Ion Research Facility in Lanzhou (HIRFL)



SSC (K=450)
100 AMeV (H.I.), 110 MeV (p)



SFC (K=69)
10 AMeV (H.I.), 17~35 MeV (p)





HIRFL : Experimental setups



On-line Experiment for γ ray



Material Irradiation



Micro-beam



External Target Experiment @ CSRm



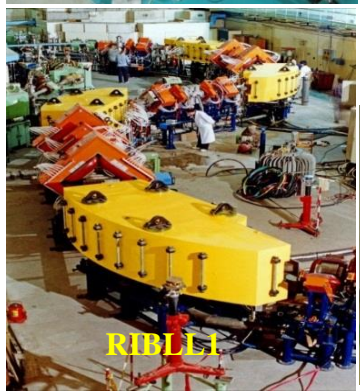
Experiment for DR research



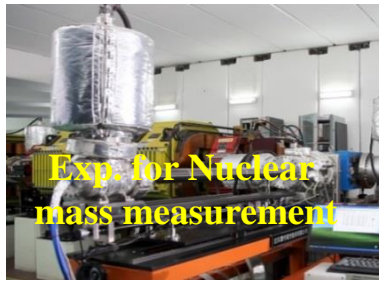
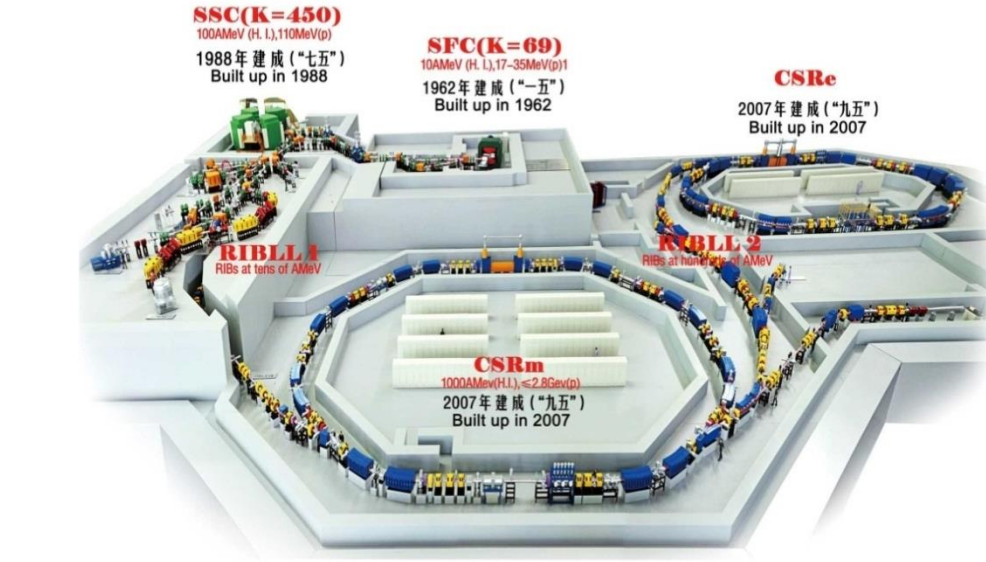
Gas Filled Recoil Separator



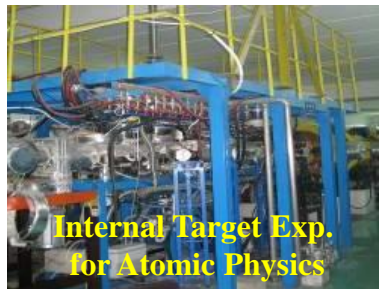
Space Science



RIBLL1



Exp. for Nuclear mass measurement



Internal Target Exp. for Atomic Physics



Cancer Therapy & Breeding



Nuclear membrane



Cancer Therapy & Biology Irradiation



PISA



HIAF & CiADS brief introduction

- **HIAF:** High Intensity heavy ion Accelerator Facility
- **CiADS:** China Initiative Accelerator Driven System
- Being built by IMP in Huizhou of Guangdong Prov.
- Two of 16 large-scale scientific infrastructure facilities approved by China Government during the 12th 5-year-plan 2016-2020

- **HIAF:** Nuclear physics research
- **Total budget:** 2.8 B CNY ¥ (424 M USD \$)
- **Schedule:** 2018-2025
- Construction started officially Dec. 2018

- **CiADS:** Nuclear waste transmutation
- **Total budget:** 4.0 B CNY ¥ (606 M USD \$)
- **Schedule:** 2021-2027
- Construction started officially July. 2021



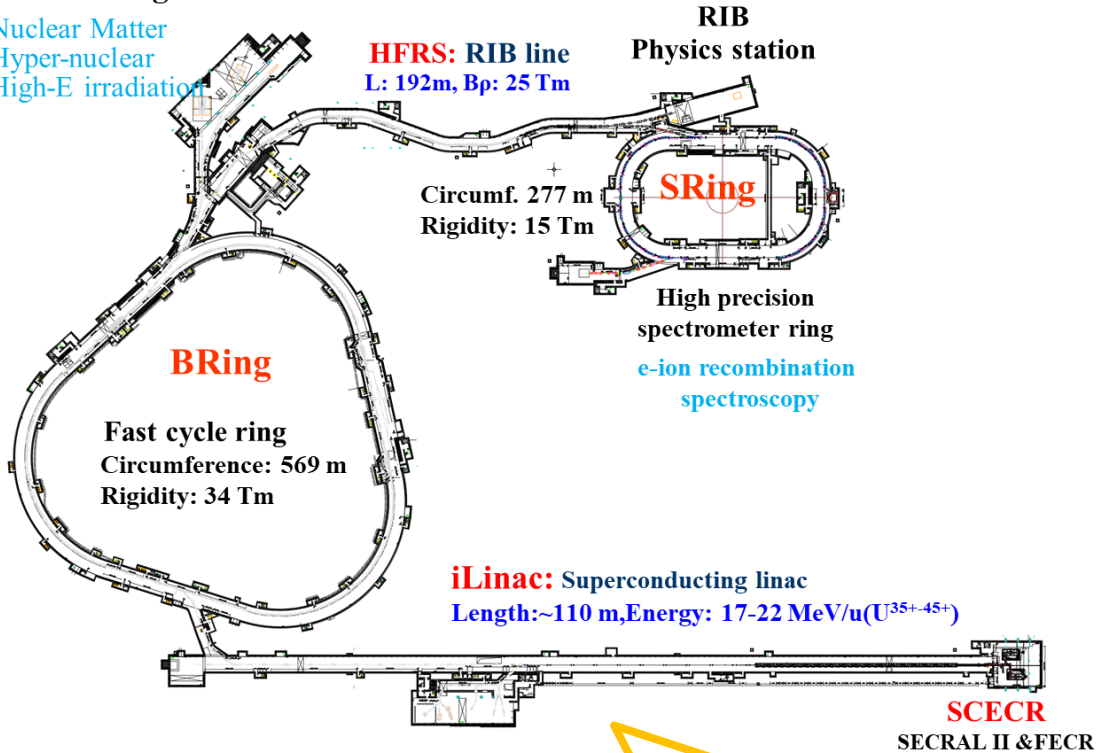


HIAF & CiADS status in 2026

HIAF

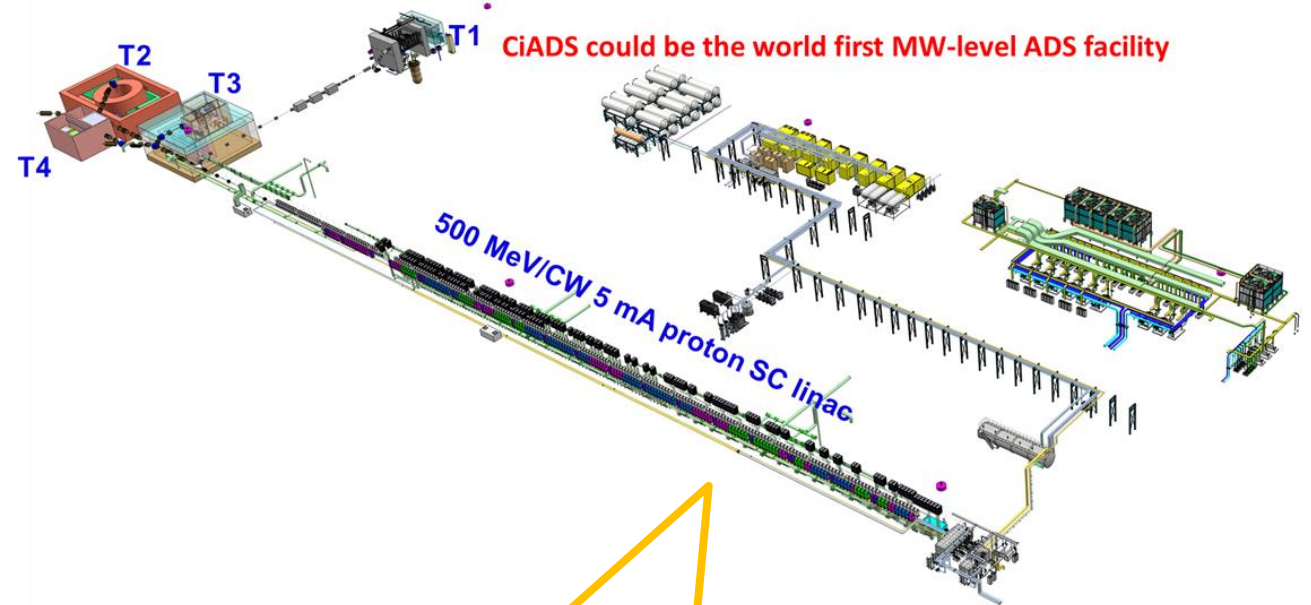
External target station

Nuclear Matter
Hyper-nuclear
High-E irradiation



HIAF including iLinac injector will be in beam pre-operation in 2026

CiADS



CiADS 500 MeV SC linac installation will be completed and partly in beam commissioning in 2026

Civil construction site

HIAF-SRing tunnel

HIAF-BRing tunnel

CiADS

HIAF

CiADS site

Equipment test building
No.2

HIAF operation building
No.2

1# Cryogenic center

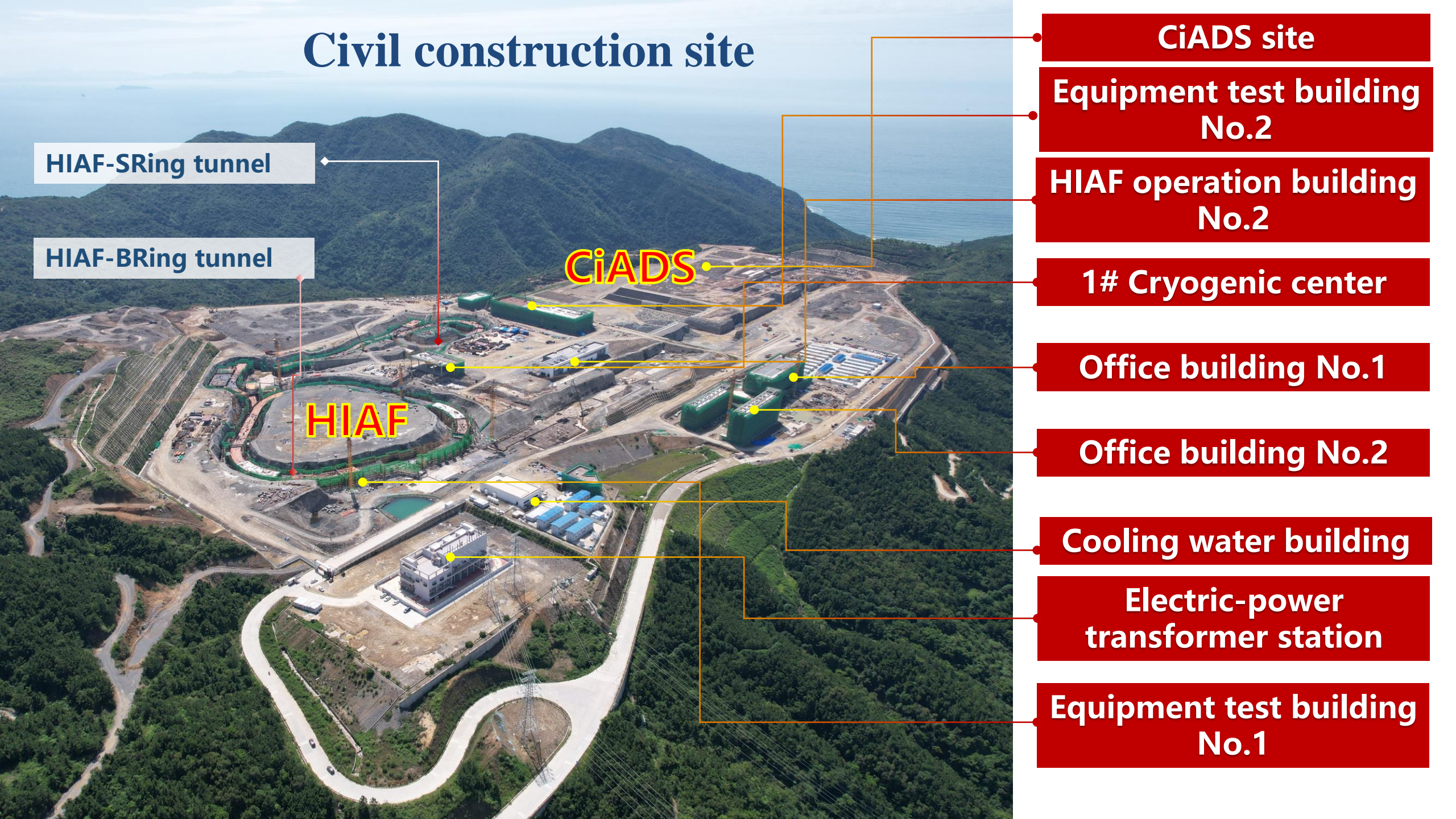
Office building No.1

Office building No.2

Cooling water building

Electric-power
transformer station

Equipment test building
No.1





2 campuses, Lanzhou and Huizhou (new)



HIRFL @Lanzhou
Gansu Province

Main campus,
40,000 m²



Proposed LINAC2026
Conference venue



CiADS & HIAF
project site



Huizhou
Guangdong Province

New campus 85,000 m²
Project site 594,000 m²



Campus
in operation

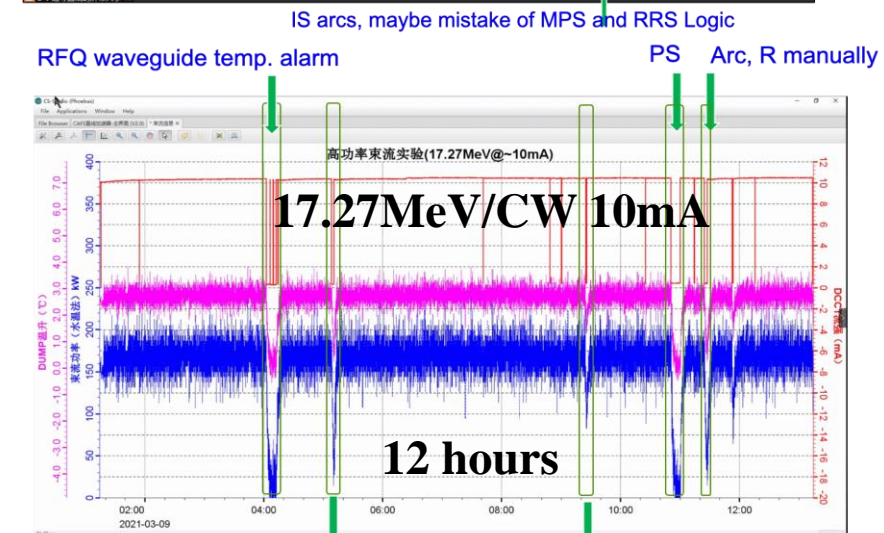
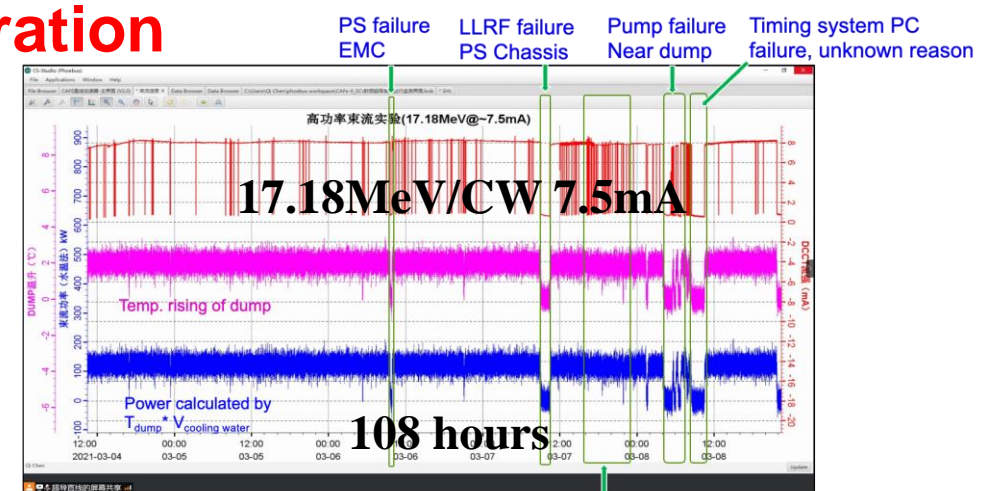
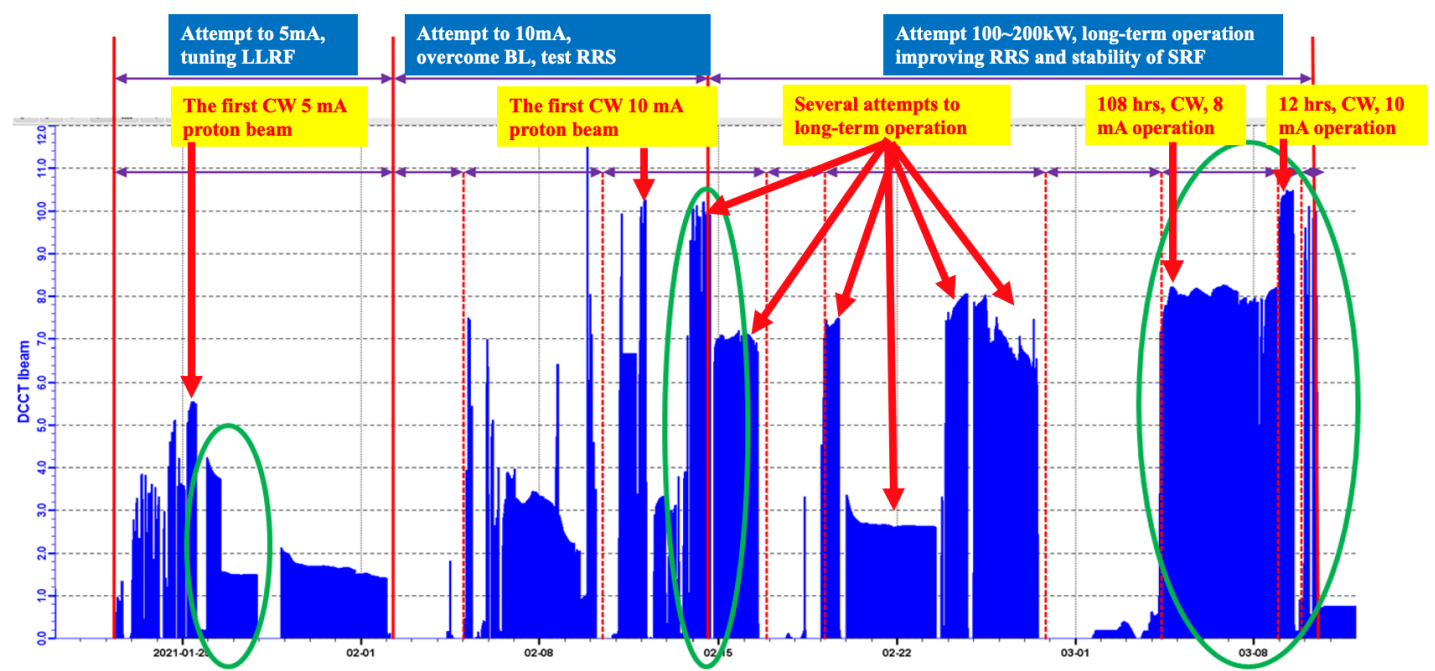


- **Affiliation: Chinese Academy of Sciences (CAS)**
- **Location: Suburb of Huizhou, 30 km from Huizhou Airport, 110 km from Shenzhen Airport**
- **HIAF and CIADS are being built in Huizhou**



17-20 MeV/5-10 mA front-end demo facility for CiADS linac

- Operation from Jan. 20 to Mar. 10, 2021 **The world first demonstration**



Availability: 126.1 kW, op. time **108 hs**, availability **93.6%**
 Beam current: 174.4 kW, **10.08 mA**, op. time 12 hs
 High power: 20.18 MeV, 10.18 mA, **beam power 205.5 kW**

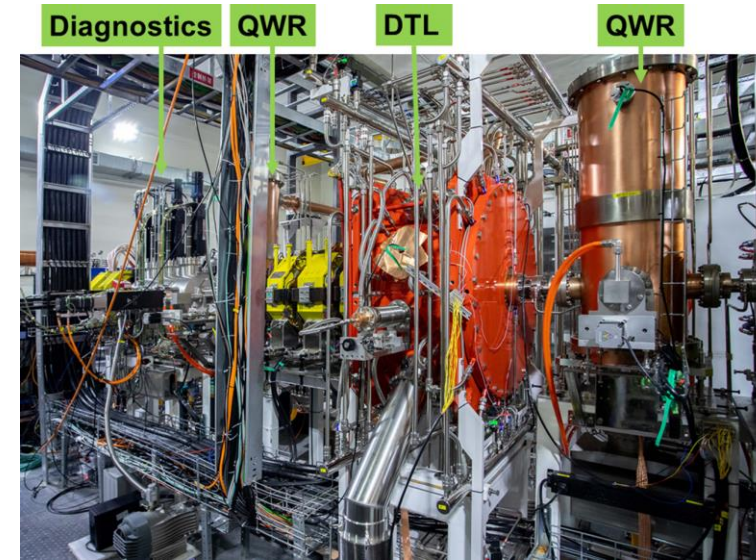
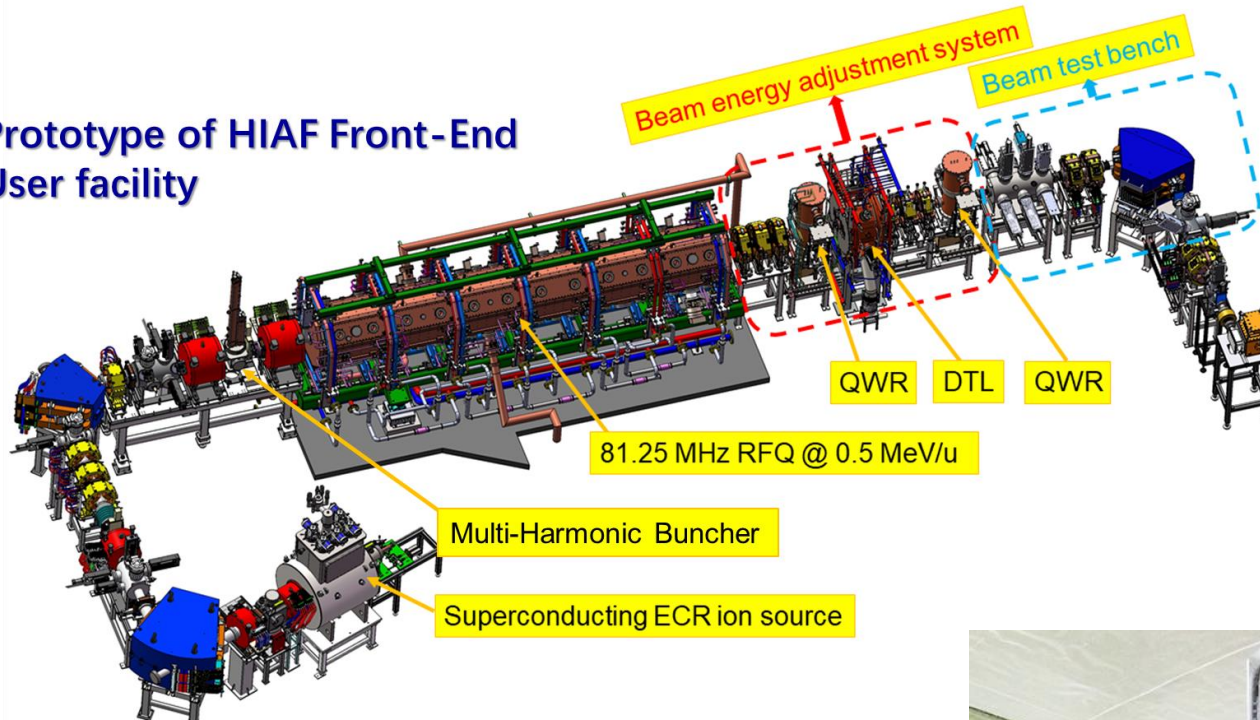


CM2-1 coupler Vac, IS arc, R manually



LEAF—High Intensity Low Energy Accelerator Facility

- ✓ Prototype of HIAF Front-End
- ✓ User facility



- Ion $M/q=2-7$. Beam current $\sim 100 \mu\text{A}$
RFQ Transmission efficiency $> 97\%$
RFQ Acceleration efficiency $> 85\%$
- Ar^{9+} $410 \mu\text{A}$, RFQ transmission $> 90\%$
 Ar^{9+} $730 \mu\text{A}$, RFQ transmission $\sim 72\%$





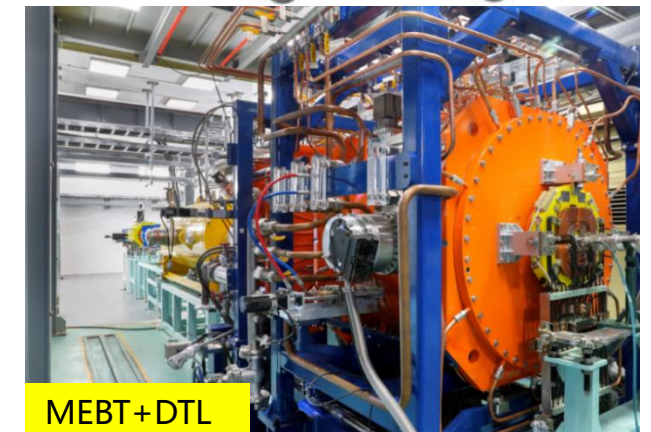
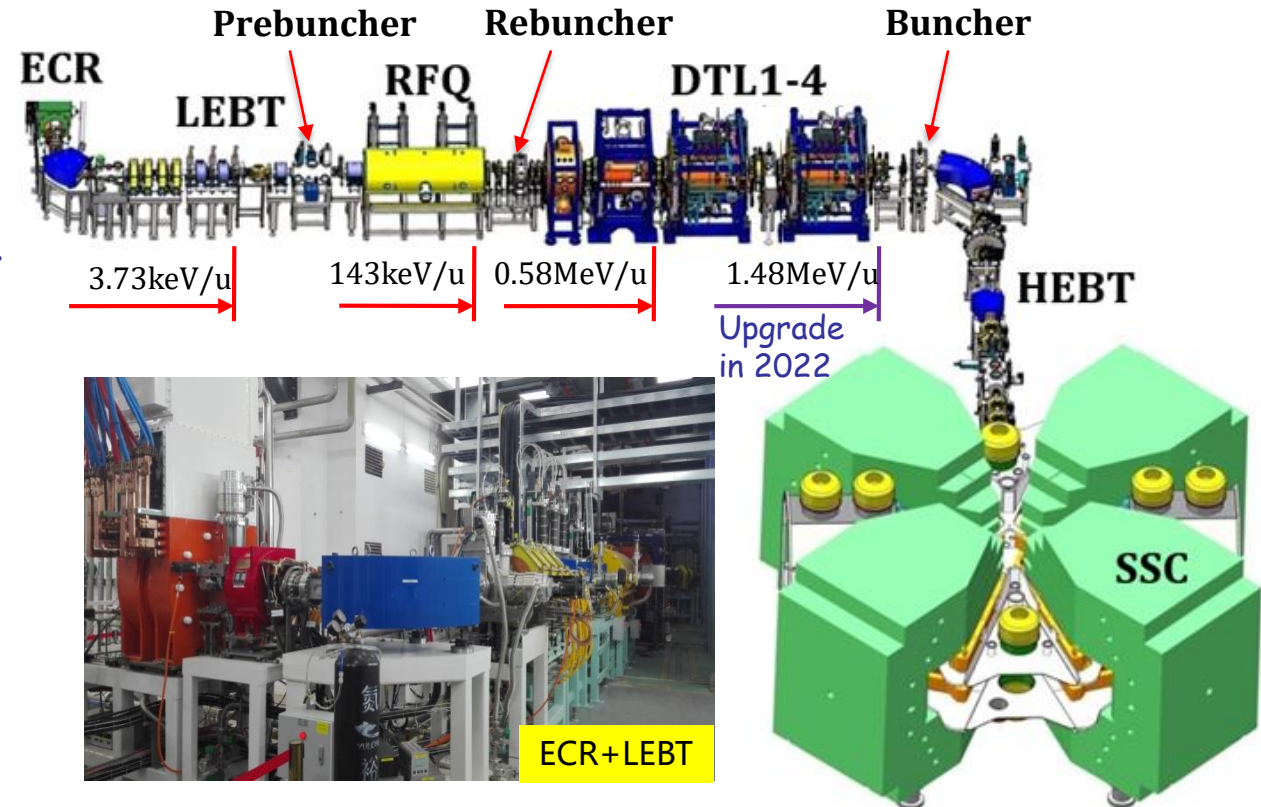
HIRFL-SSC cyclotron heavy LINAC injector

- CW heavy ion linac.
- Beam intensity increase one order of magnitude.
- 5200 hours beam time provided in the last two years.

Design ion	$^{238}\text{U}^{34+}$
Frequency	53.667MHz
Design A/q	7
ε (90%nomalized)	$0.6\pi\text{mm.mrad}$

Typical ions supplied by the SSC Linac

Ion	I(μA)-Linac	I(μA)-SSC
$^{12}\text{C}^{2+}$	45	3
$^{18}\text{O}^{3+}$	30	2
$^{40}\text{Ar}^{8+}$	80	7
$^{78}\text{Kr}^{13+}$	60	2.3
$^{129}\text{Xe}^{22+}$	40	1.5
$^{209}\text{Bi}^{32+}$	20	3.6



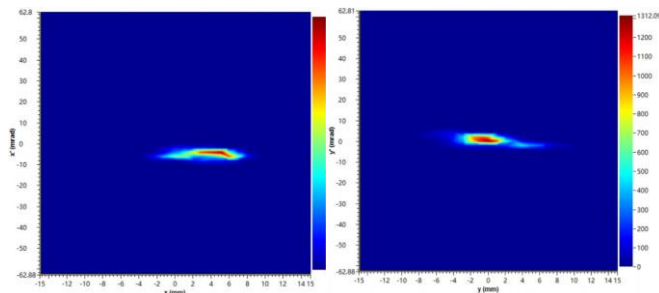


4.0 MeV/A $^{12}\text{C}^{4+}$ ion LINAC injector for therapy machine

Parameters	
Ion	$^{12}\text{C}^{4+}$
Frequency	162.5MHz
Energy	4.0 MeV/u
Current	200eμA
ϵ_{Tn}	$0.6\pi\text{mm.mrad}$
ϵ_{Ln}	34.2keV/u.deg
Transmission	>90%

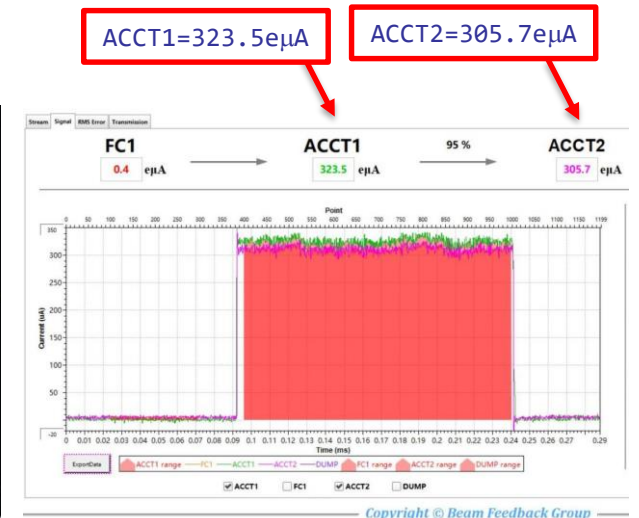
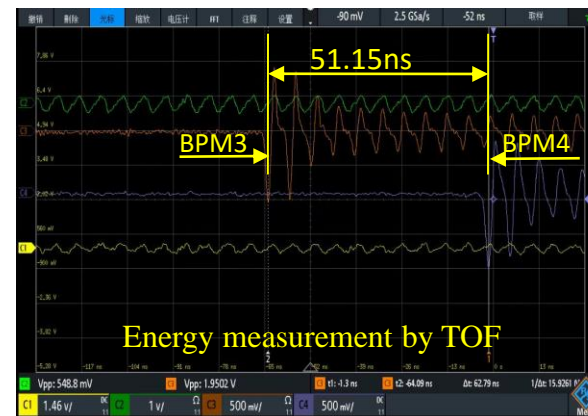


- Compact structure: 4-rod RFQ & IH-DTL
- Pulse machine: duty factor 1‰
- Maximum beam current 300eμA for C^{4+}
- Transmission 94.5%



$\epsilon_{xn} = 0.4\pi\text{mm.mrad}$ $\epsilon_{yn} = 0.38\pi\text{mm.mrad}$

Measured emittance at the DTL exit



Conference Venue – Huizhou city



Where is Huizhou and how to come



- Huizhou (惠州) is a city in central-east Guangdong Province, China.
- 120 km to Hong Kong airport. 145 km to Guangzhou airport. 110 km to Shenzhen airport.

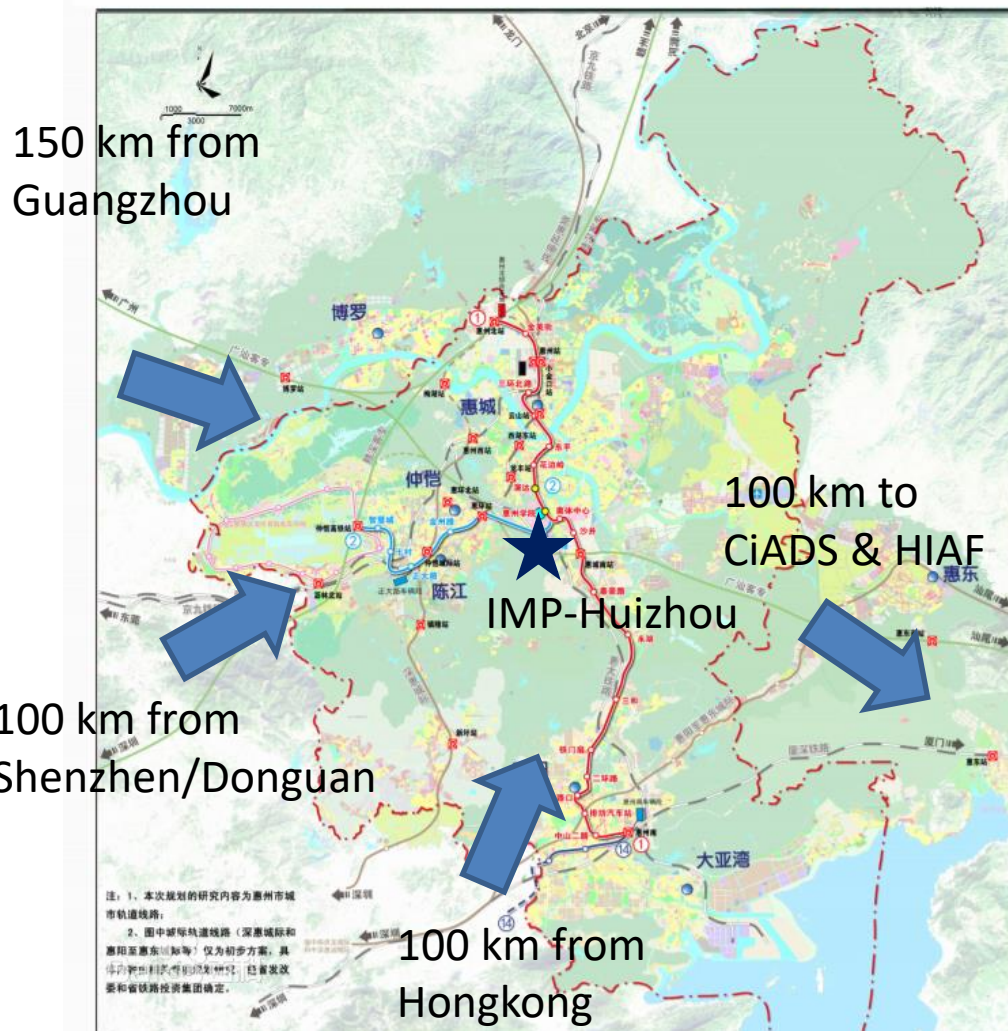


- **3 hours** flight from Beijing (to Huizhou airport)
- **2 hours** flight from Shanghai
- **Population: 6 million**
- **GDP(2021): 500 billion CNY**
~73.5 billion USD

Public Transportation in Huizhou



Intercity train and light rail are convenient



Intercity train to Shenzhen and Guangzhou



Light rail



6 buses each day between Huizhou and Hongkong



- **Huizhou Kande Intl' Hotel** located in downtown
- Gorgeous view @ main river bank
- 15 min drive from IMP campus





- Sheraton Bailuhu Resort
- 40 mins drive to IMP campus, 20 mins to downtown



Hotel Information in Huizhou



Plenty of hotels in Huizhou center city. Ranging from resorts (~200 USD per night) to economy hostels (~30 USD per night)

Crowne Plaza Huizhou

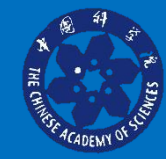


Huizhou Xilin West Lake Boutique Hotel



Our Top Picks

- Crowne Plaza Huizhou, an IHG Hotel** 9.0 Wonderful (21 reviews)
 - Standard Room
 - Up to 2 beds
 - 2 nights, 2 adults
 - CNY 1,030 (+CNY 171 taxes and charges)
 - Free cancellation
- Atour Hotel Huizhou Zhongkai Tianyi** 4.0
 - Superior Double Room
 - 1 bed
 - 2 nights, 2 adults
 - CNY 739 (Includes taxes and fees)
 - Free cancellation
- Renaissance Huizhou Hotel** 8.0 Very Good (47 reviews)



Conference Dates and Registration Fee



◆ Conference dates

The Third or the fourth week in October, 2026. Very nice weather in October, $25^{\circ}\text{C}\sim 27^{\circ}\text{C}$

◆ Registration fee

- The registration fee could be RMB3300 Yuan (about \$500)
- For students, the registration fee could be RMB2000 Yuan (about \$300)
- Continue Young Scientist Award
- **Lunches will be included**



- Social activities may include welcome reception, banquet with the view of the Dongjiang River and Huizhou West-lake.



- Excursions:
 - Visit HIAF/CiADS facilities
 - Local sightseeing (to be determined)
 - Companions are also welcome to explore Huizhou. Nice place for vocation.

Past International Conference Experience at IMP



27th International Conference on Atomic Collisions in Solids
July 24 – 30, Lanzhou, China



2016.07.24 – 07.30





18th International Conference on Ion Sources (ICIS 2019) Sept. 01 – 06,
Lanzhou, China





Welcome to IMP-Huizhou. Looking forward to seeing you in 2026

