

**ÚSTAV FYZIKY PLAZMATU  
AV ČR v.v.i.**

**ZA SLOVANKOU 1782/3  
PRAHA 8**

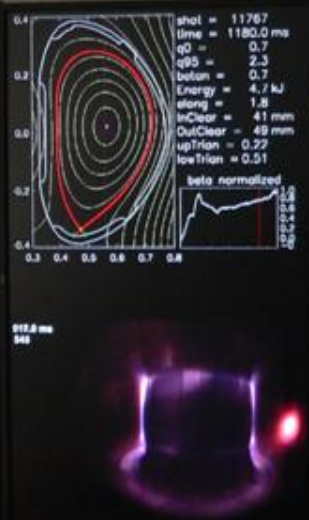
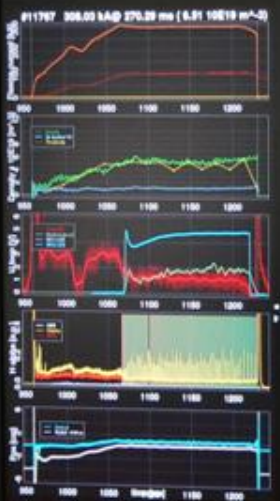
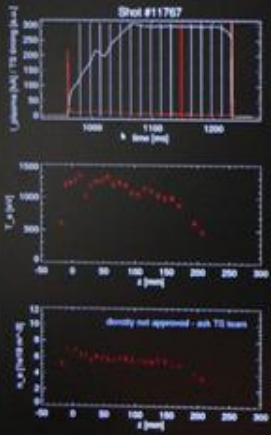
**PRACoviŠTĚ**

**TOKAMAK**

**U SLOVANKY 1770/3  
PRAHA 8**



### Thomson scattering



**COMPASS**  
 INSTITUTE OF PLASMA PHYSICS ASER

14:10:37 11.A. 2016

Showing shot: **#11767** 12:30:55 07.04. 2016  
 Campaign: CC14.06 Heat flux measurements  
 Shot: small trianp, 300kA, advanced density feedback

Heat shot: **#11763** 0 %

Capacitor bank

TRIGGER: **PROCEED TO FIRE**

GENERATOR 1: 0 rpm GENERATOR 2: 0 rpm

RB01 G01 RB02 G02

POWER DISTRIBUTION

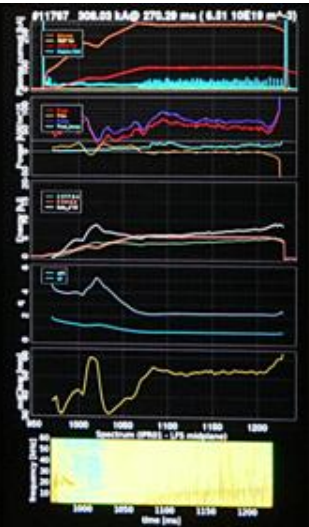
EPFS SPFS HPFS FPPS RMP

NOE TP1 TP2

COOLING

Power Input: 80kW

DTACQ16: **██████████**





# COMPASS

INSTITUTE OF PLASMA PHYSICS ASCR

14:10:37 11.4. 2016

Showing shot: **#11767** 12:30:55 07.04. 2016

Campaign: CC14.06 Heat flux measurements  
Shot: small triang. 300kA, advanced density feedback

Next shot: **#11783**

Capacitor bank 0 %

TRIGGER PRESSURE: 7.0E-7 Pa

GENERATOR 1: 0 rpm    GENERATOR 2: 0 rpm

RB01   GG1                      RB02   GG2

#### POWER DISTRIBUTION

EFPS   SFPS   MFPS   FFPS   RMP

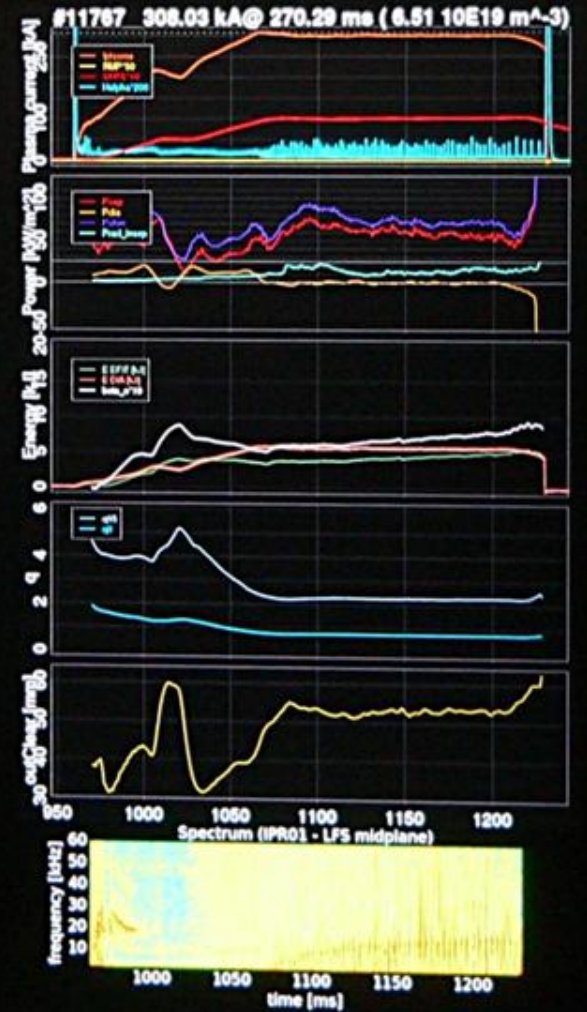
NBI   TF1   TF2   300k

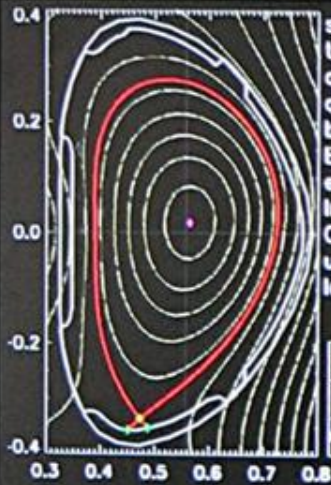
#### COOLING

YOKOHAMA   DENSE TANK   PUMP 9971.3DC

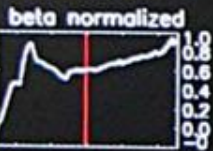
Power input: 89kW

DTACQ216: 1 2 3 4 5 6 7 8





shot = 11767  
 time = 1098.0 ms  
 q0 = 0.8  
 q95 = 2.3  
 beta\_n = 0.6  
 Energy = 3.8 kJ  
 elong = 1.8  
 InClear = 42 mm  
 OutClear = 49 mm  
 upTrian = 0.21  
 lowTrian = 0.50



47.3 ms  
 298



**COMPASS**

INSTITUTE OF PLASMA PHYSICS ASOR

14:10:48 11.4. 2016

Showing shot: **#11767** 12:30:55 07.04. 2016

Campaign: CC14.06 Heat flux measurements  
 Shot: small triang. 300kA, advanced density feedback

Next shot: **#11783**

Capacitor bank 0 %

TRIGGER **PRESSURE: 7.0E-7 Pa**

GENERATOR 1: 0 rpm GENERATOR 2: 0 rpm

RB01 GG1 RB02 GG2

POWER DISTRIBUTION

EFPS SFPS MFPS FFPS RMP

NBI TF1 TF2 **TRIP**

COOLING

**TRIP** **TRIP** **TRIP**

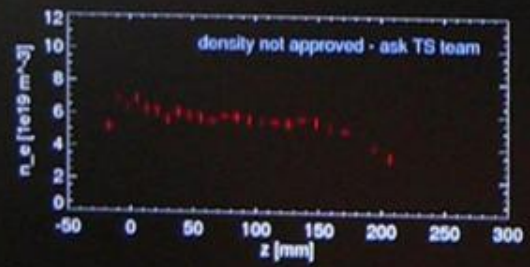
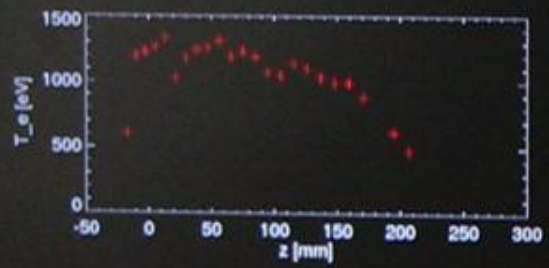
Power Input: 89kW

DTACQ216: 1 2 3 4 5 6 7 8

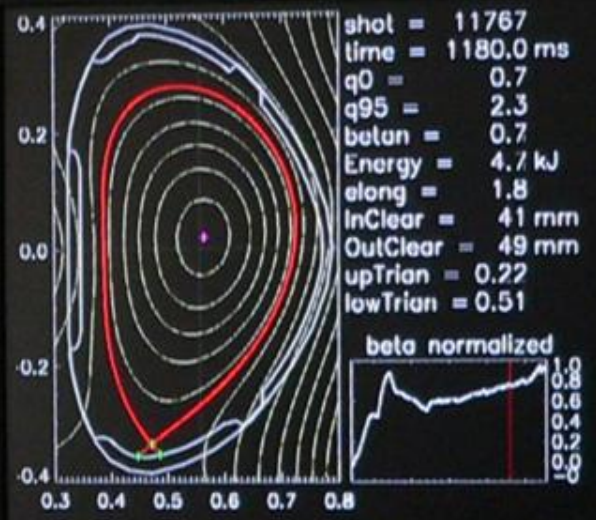
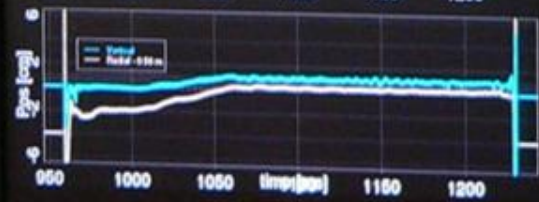
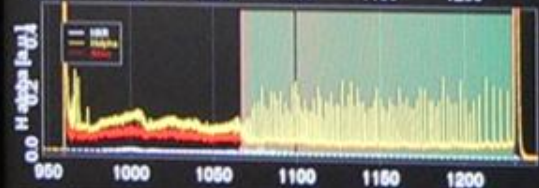
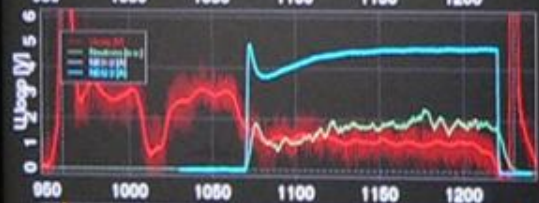
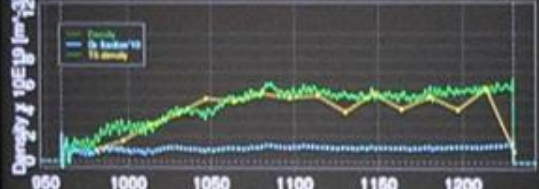
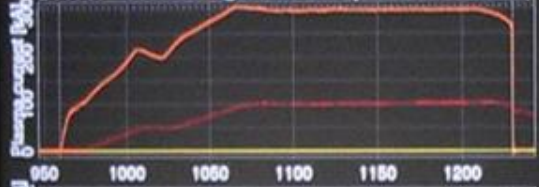


# Thomson scattering

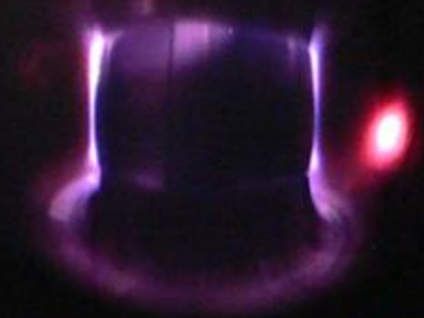
Shot #11767

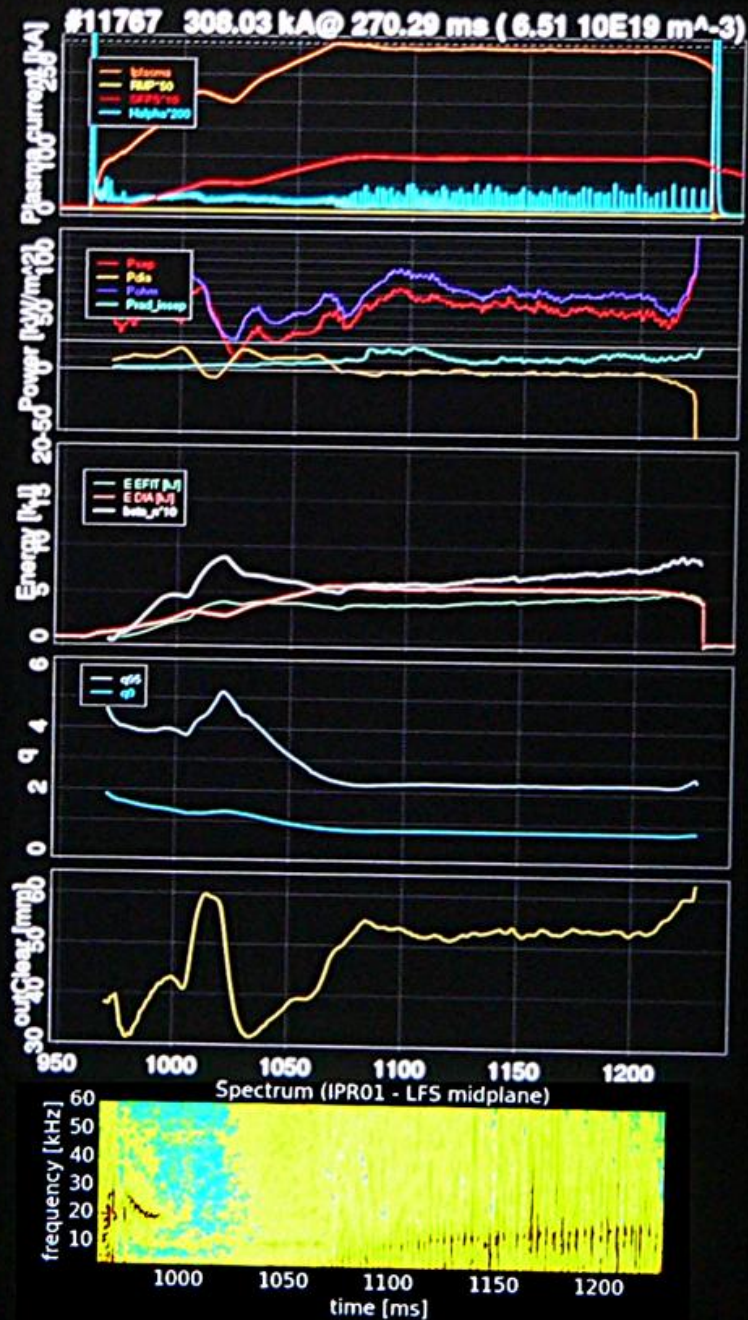


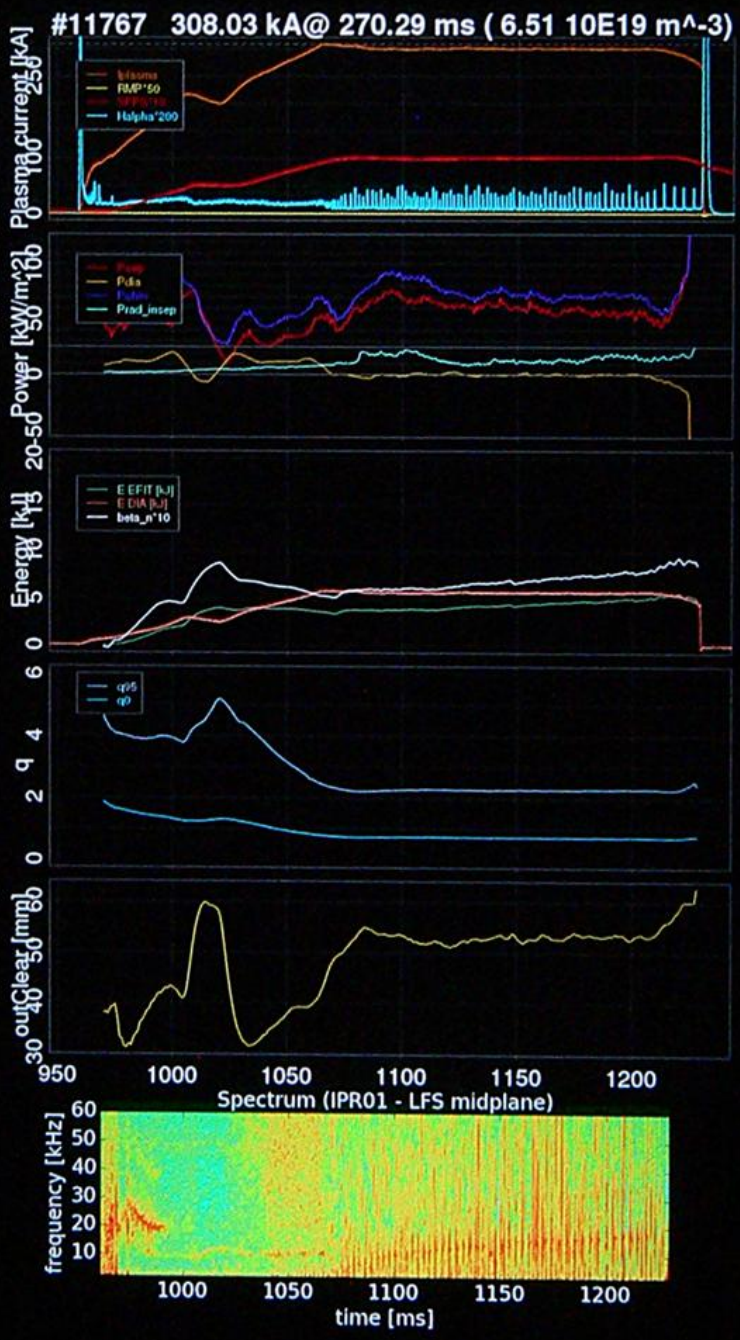
#11767 308.03 kA @ 270.29 ms (6.51 10E19 m^-3)



017.0 ms  
548



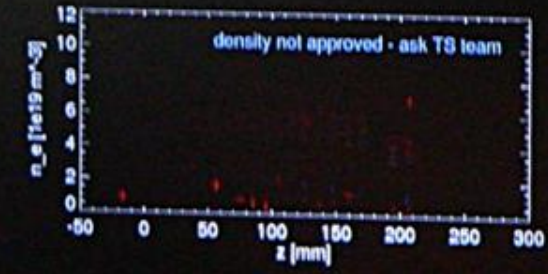
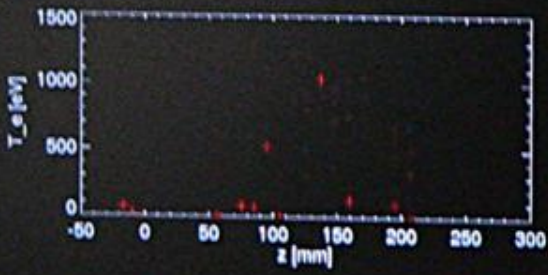




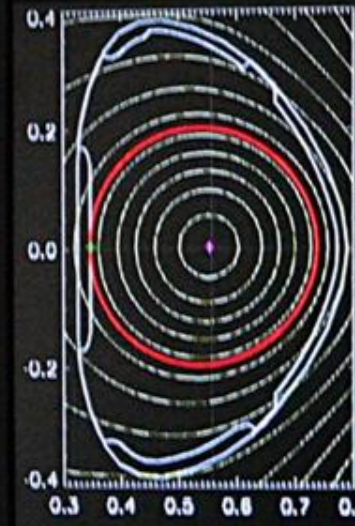
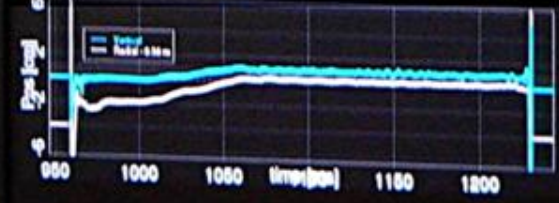
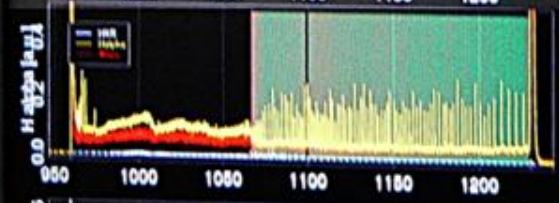
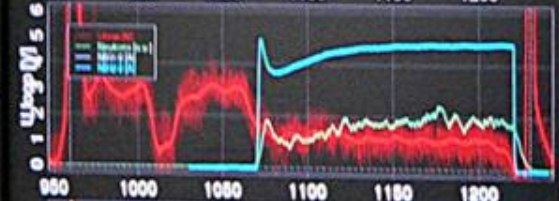
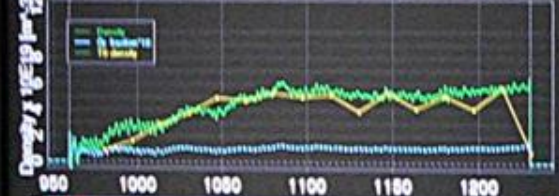
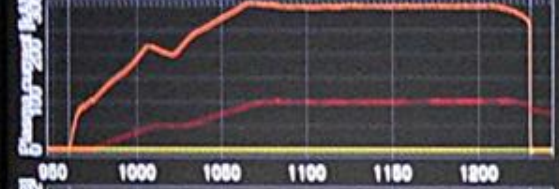


# Thomson scattering

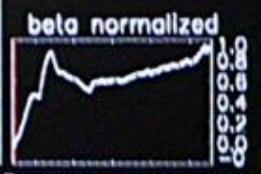
Shot #11767



#11767 308.03 kA @ 270.20 ms (0.81 10E19 m^-3)

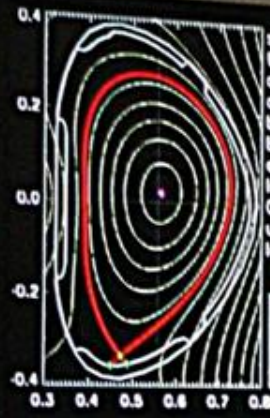
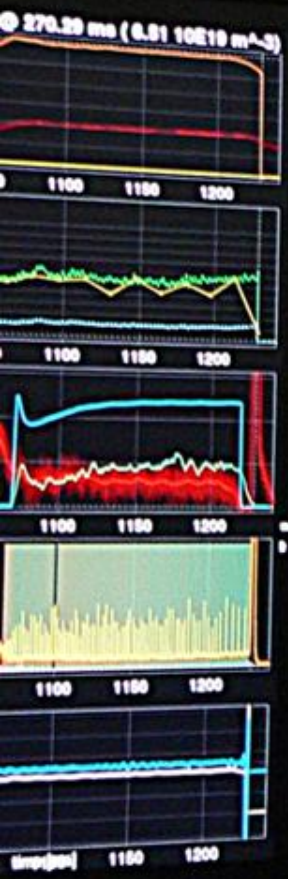


shot = 11767  
 time = 973.0 ms  
 q0 = 1.7  
 q95 = 4.2  
 beta\_n = -0.0  
 Energy = -0.0 kJ  
 elong = 1.0  
 InClear = 0 mm  
 OutClear = 34 mm  
 upTrian = 0.03  
 lowTrian = 0.04

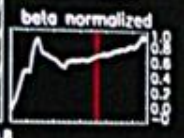


03.0 ms  
 24





shot = 11767  
 time = 1137.0 ms  
 q0 = 0.8  
 q95 = 2.3  
 beta\_n = 0.7  
 Energy = 4.2 kJ  
 elong = 1.8  
 InClear = 42 mm  
 OutClear = 48 mm  
 upTrian = 0.2  
 lowTrian = 0.50



276.4 ms  
 2963

**COMPASS**  
 INSTITUTE OF PLASMA PHYSICS ASCH

14:22:03 11.4. 2016

Showing shot: **#11767** 12:30:55 07.04. 2016  
 Campaign: CC14.06 Heat flux measurements  
 Shot: small trian, 300kA, advanced density feedback

Next shot: **#11783**

Capacitor bank: 0 %

TRIGGER: **PRESSURE: 7.0E-7 Pa**

GENERATOR 1: 0 rpm GENERATOR 2: 0 rpm

RB01 GG1 RB02 GG2

POWER DISTRIBUTION

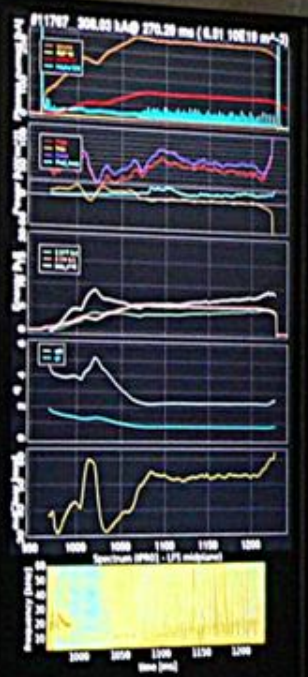
EPPS SFPS HFPS FFPS RNP

NSI TF1 TF2

COOLING

Power input: 850W

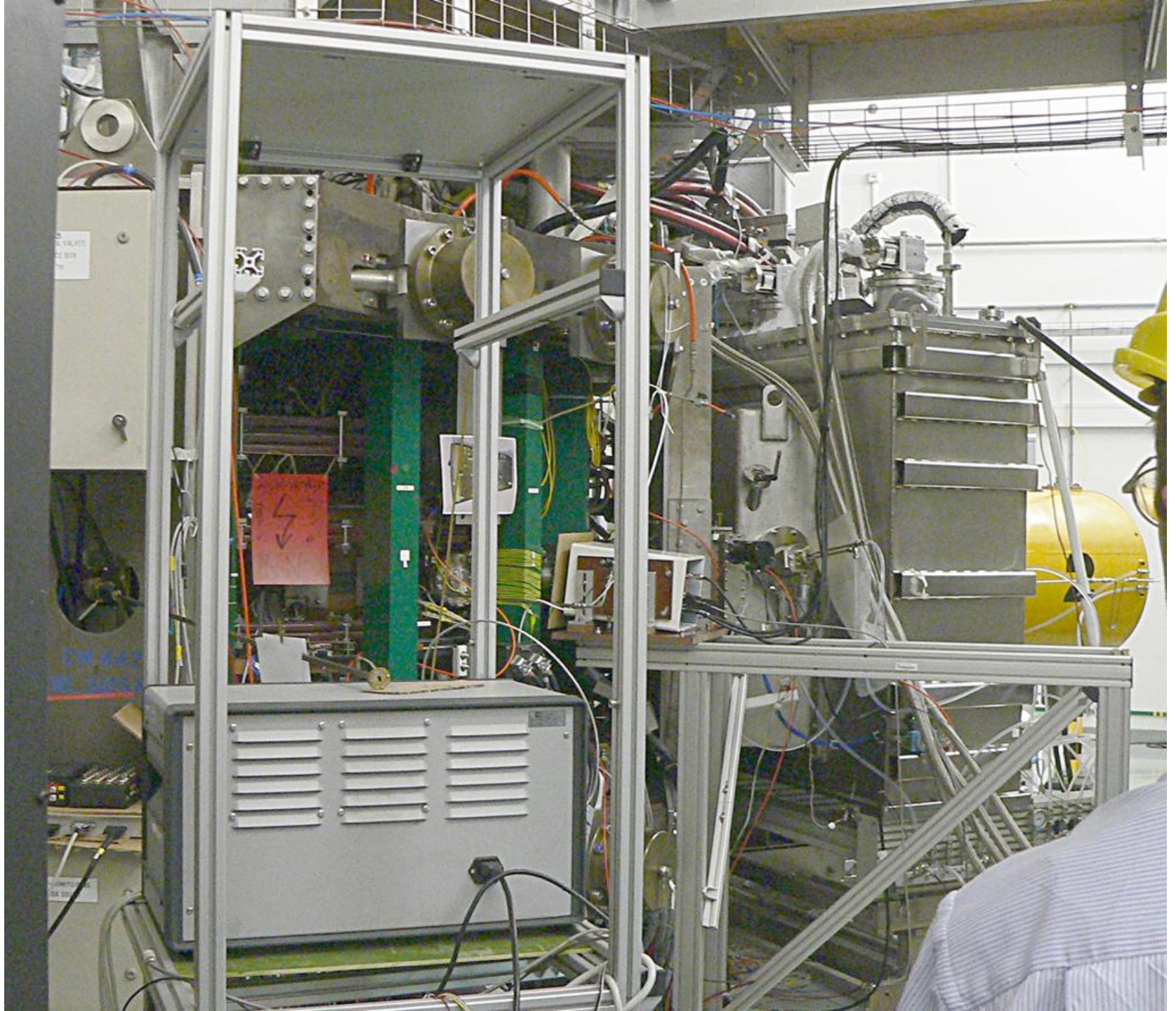
DTACQ16:

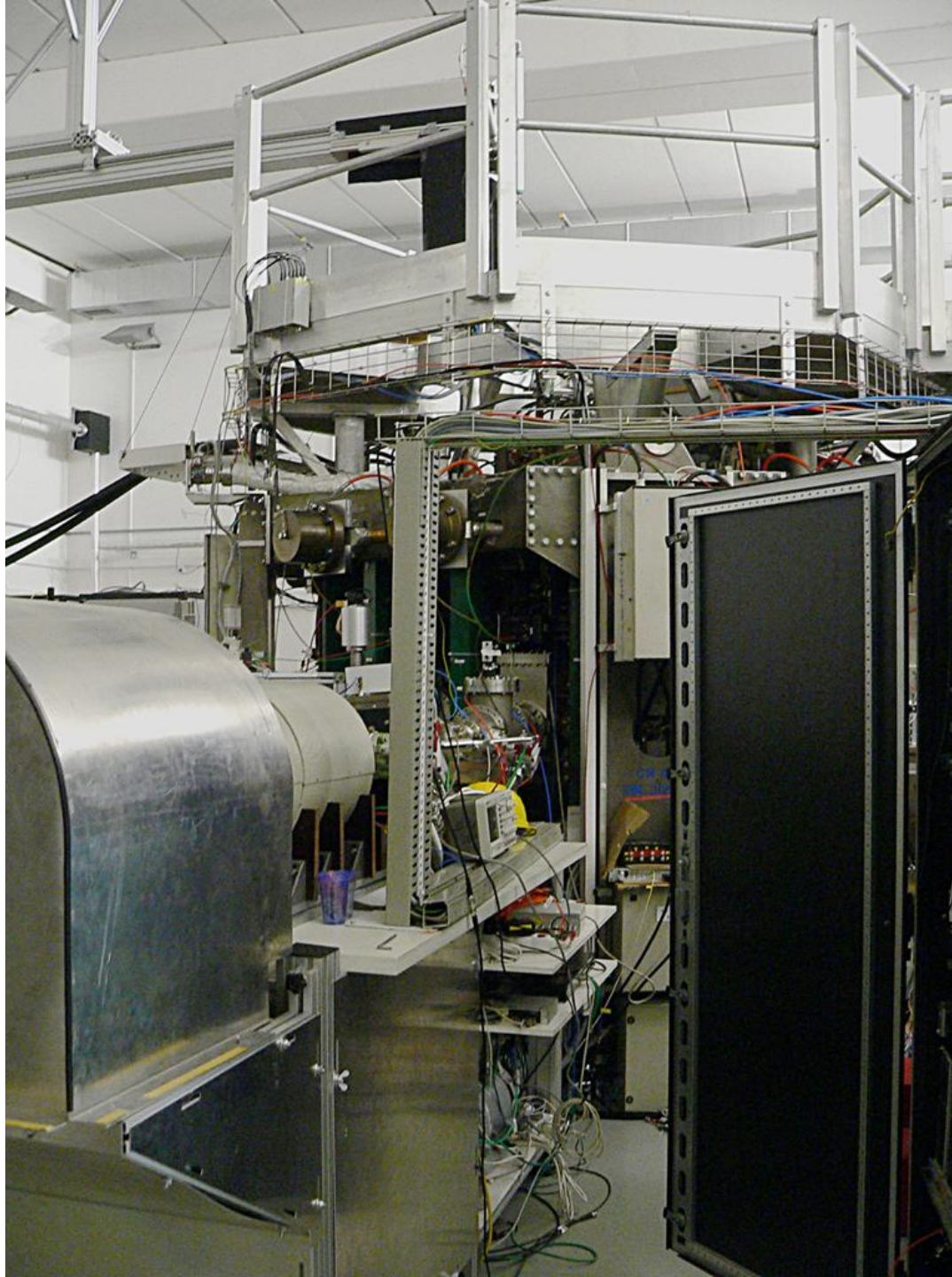


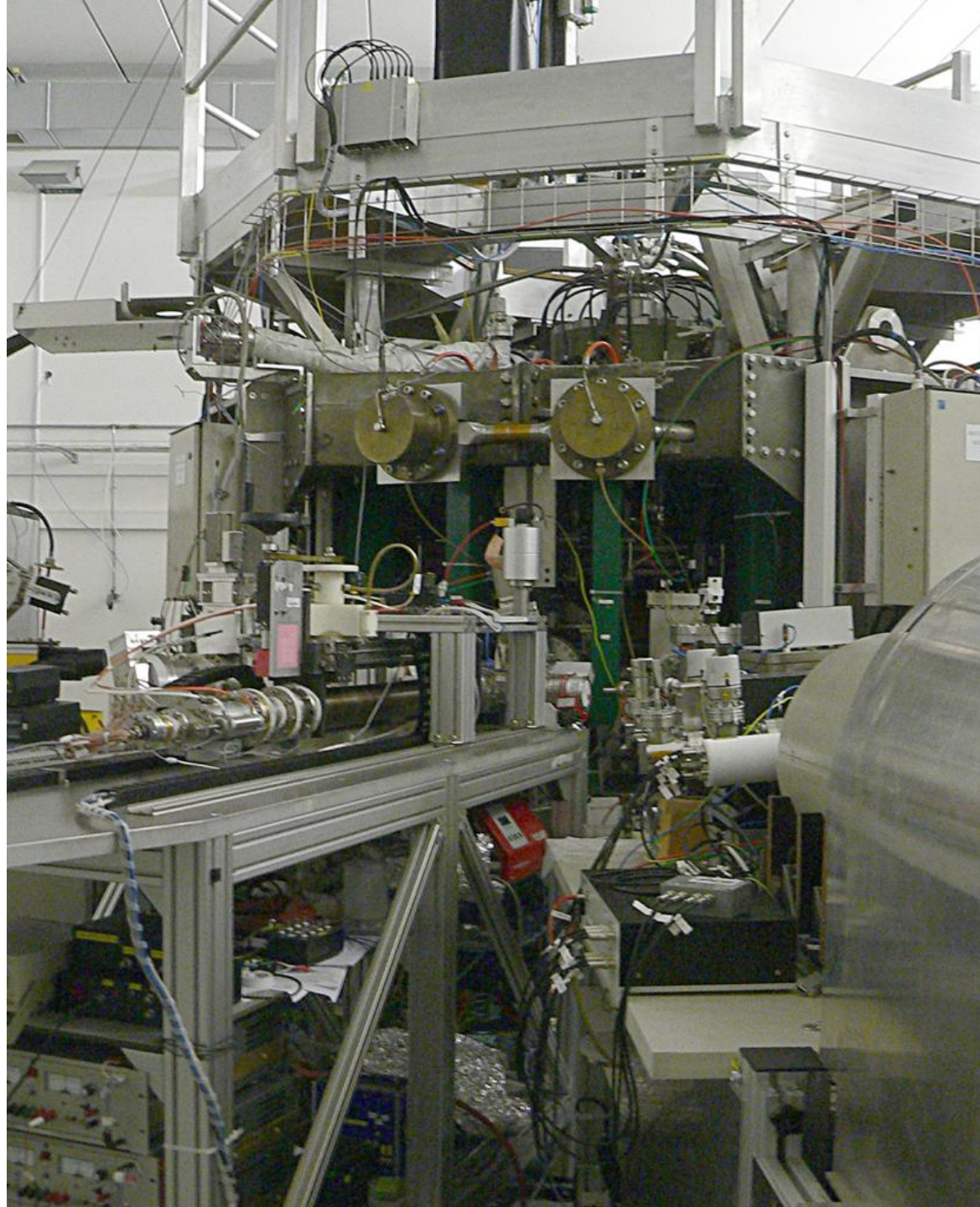


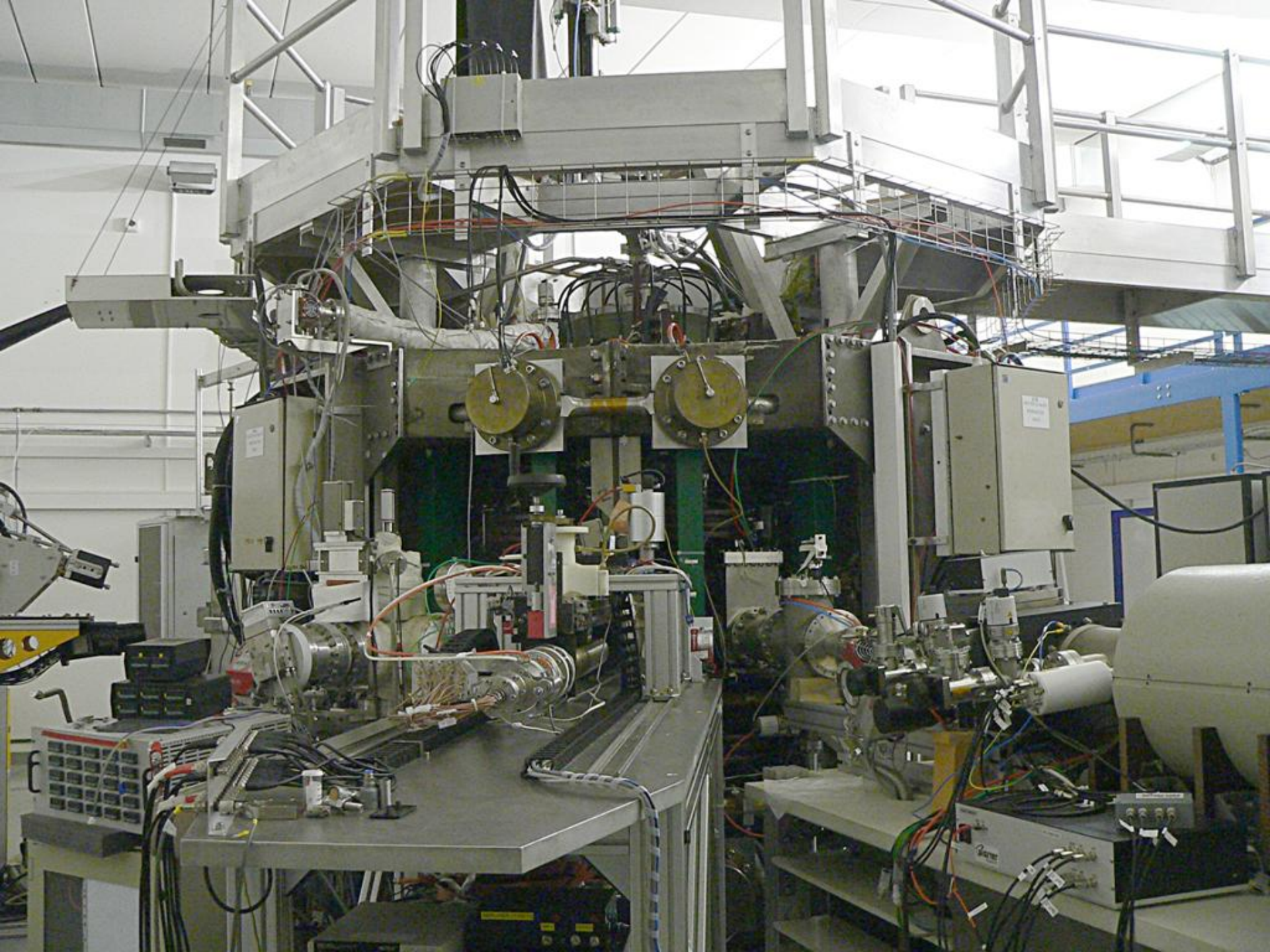
**SLEDOVANÉ PÁSMO**  
SE ZDROJI IONIZUJÍCÍHO ZÁŘENÍ

G 120a - hala 1.p.  
HELIUM - 1 x malá  
VODÍK - 1 x malá













Emergency Stop

Power

Ua



CONTROL UNIT

POWER



ready

500V



5kV



bridge on



start



PS switch



control

Inv 1



Inv 2



chop 1



hop 2



protection

Inv 1



Inv 2



I max



U max

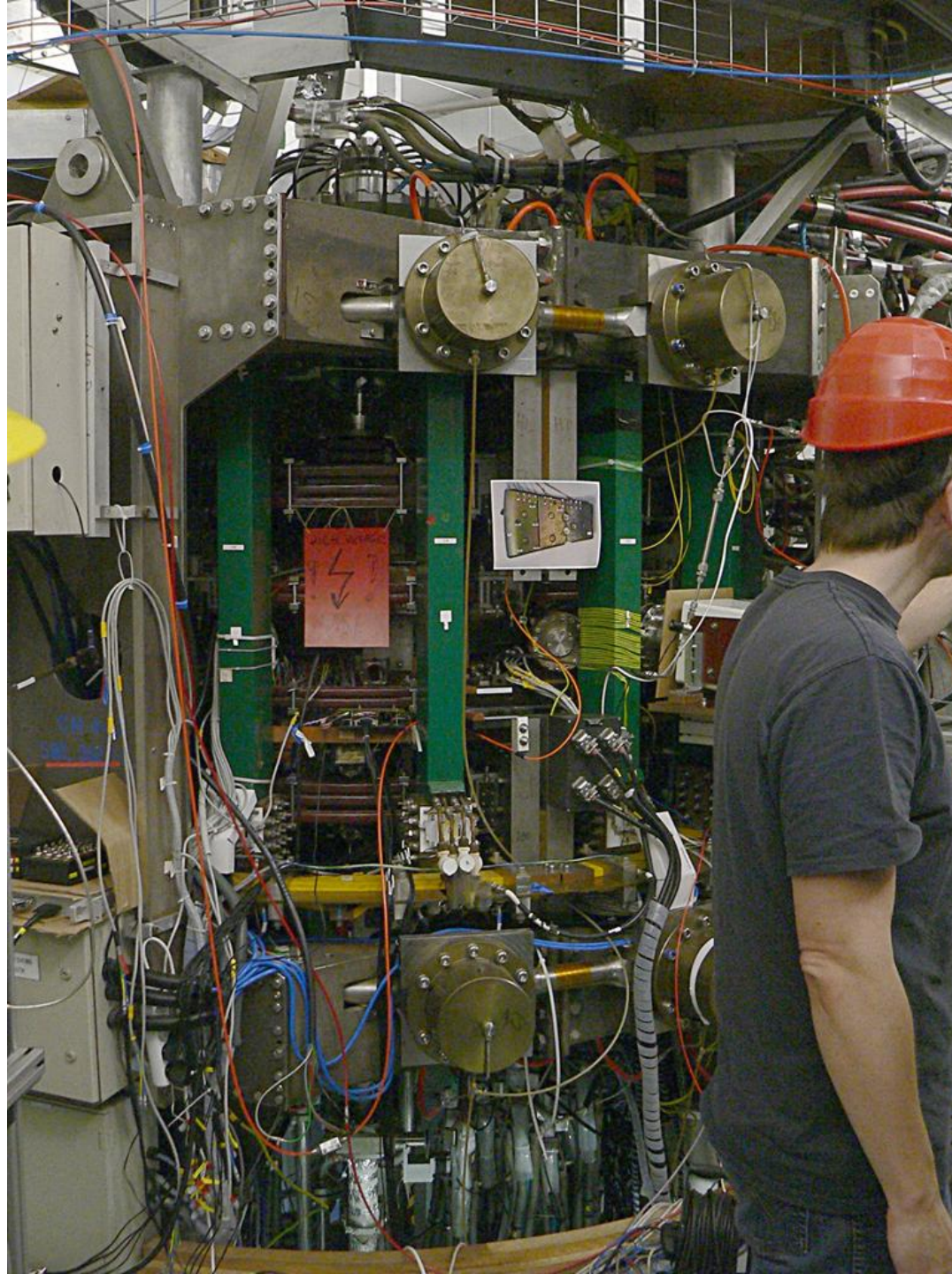


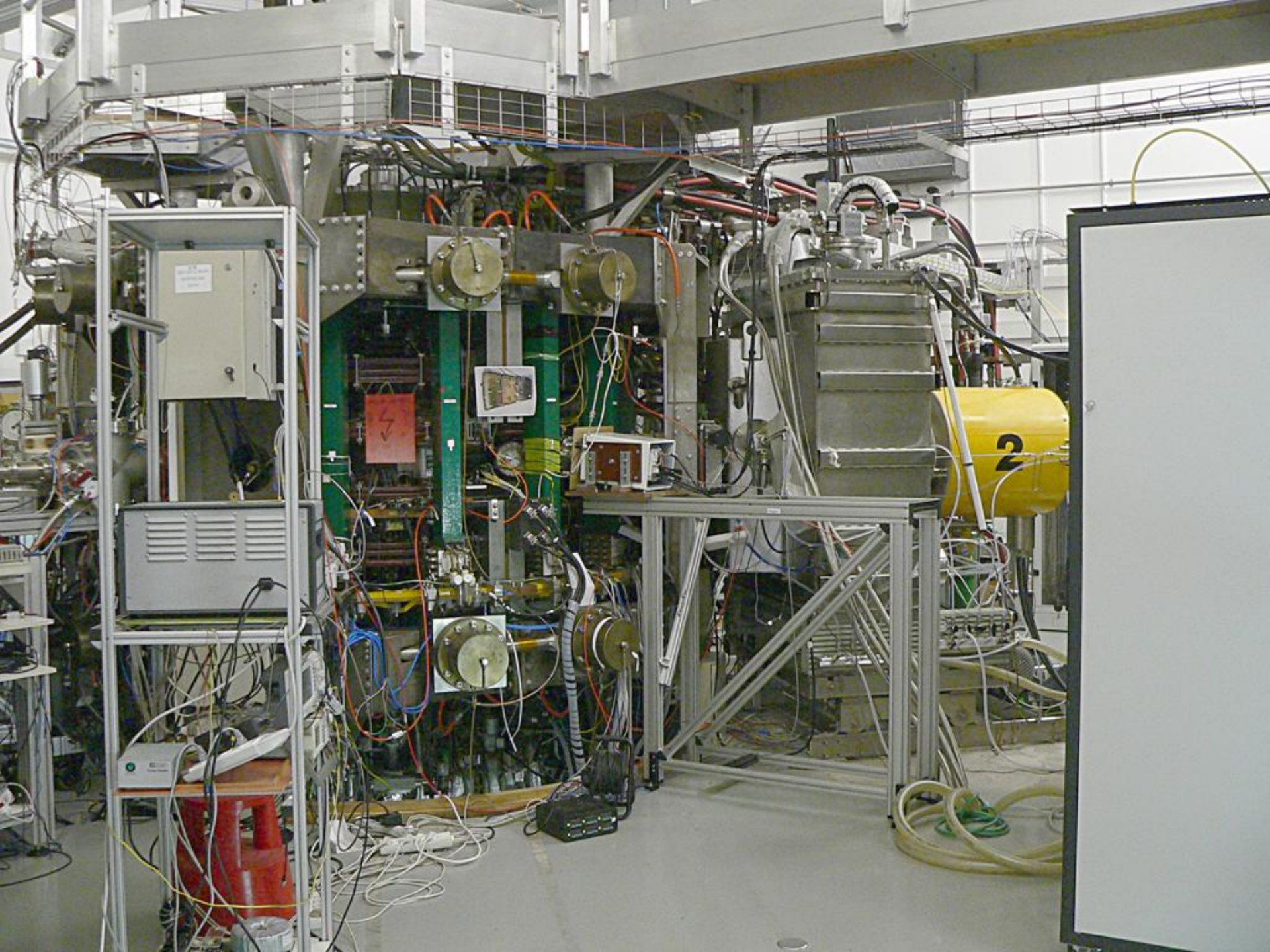
Switch

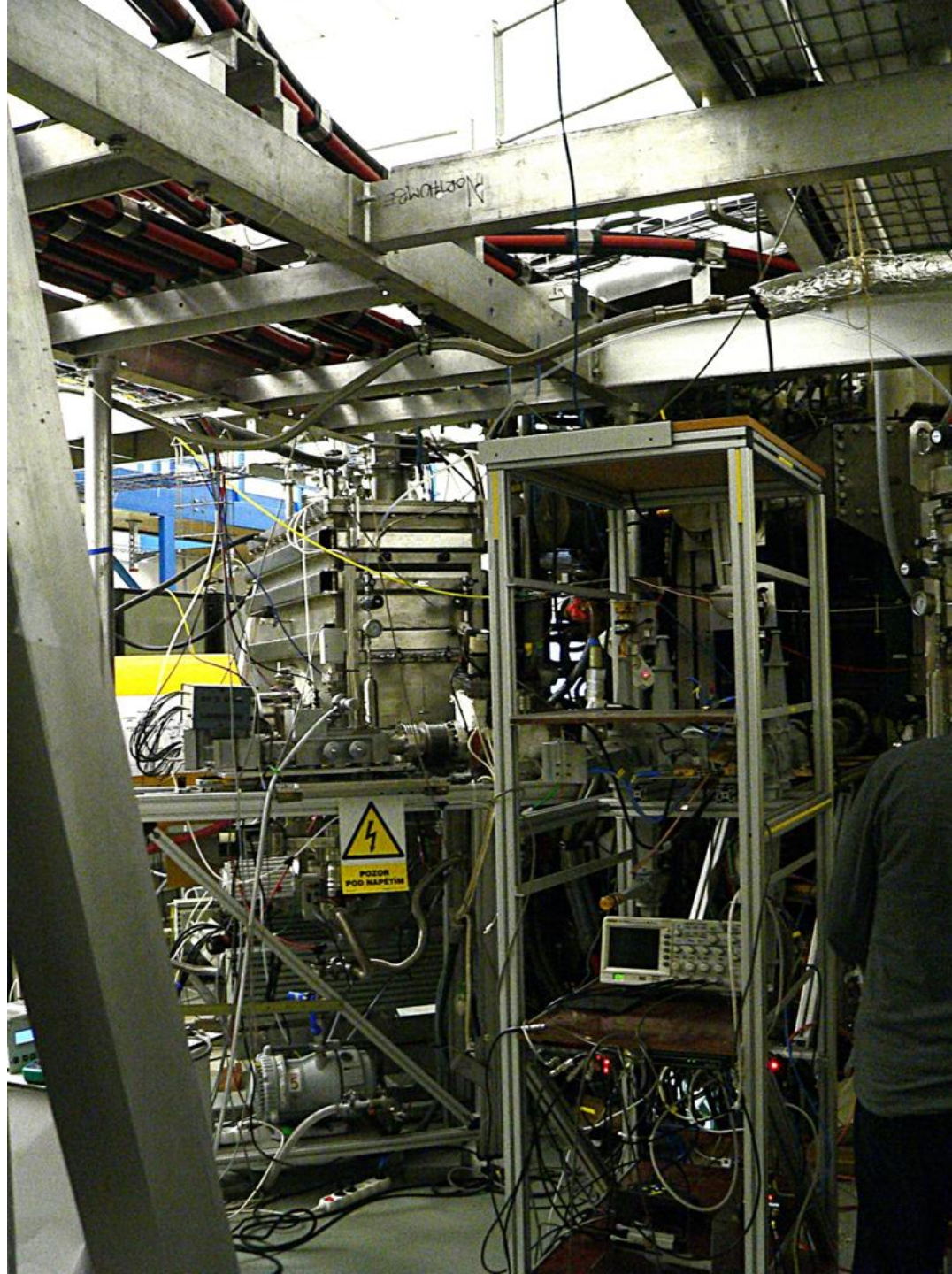


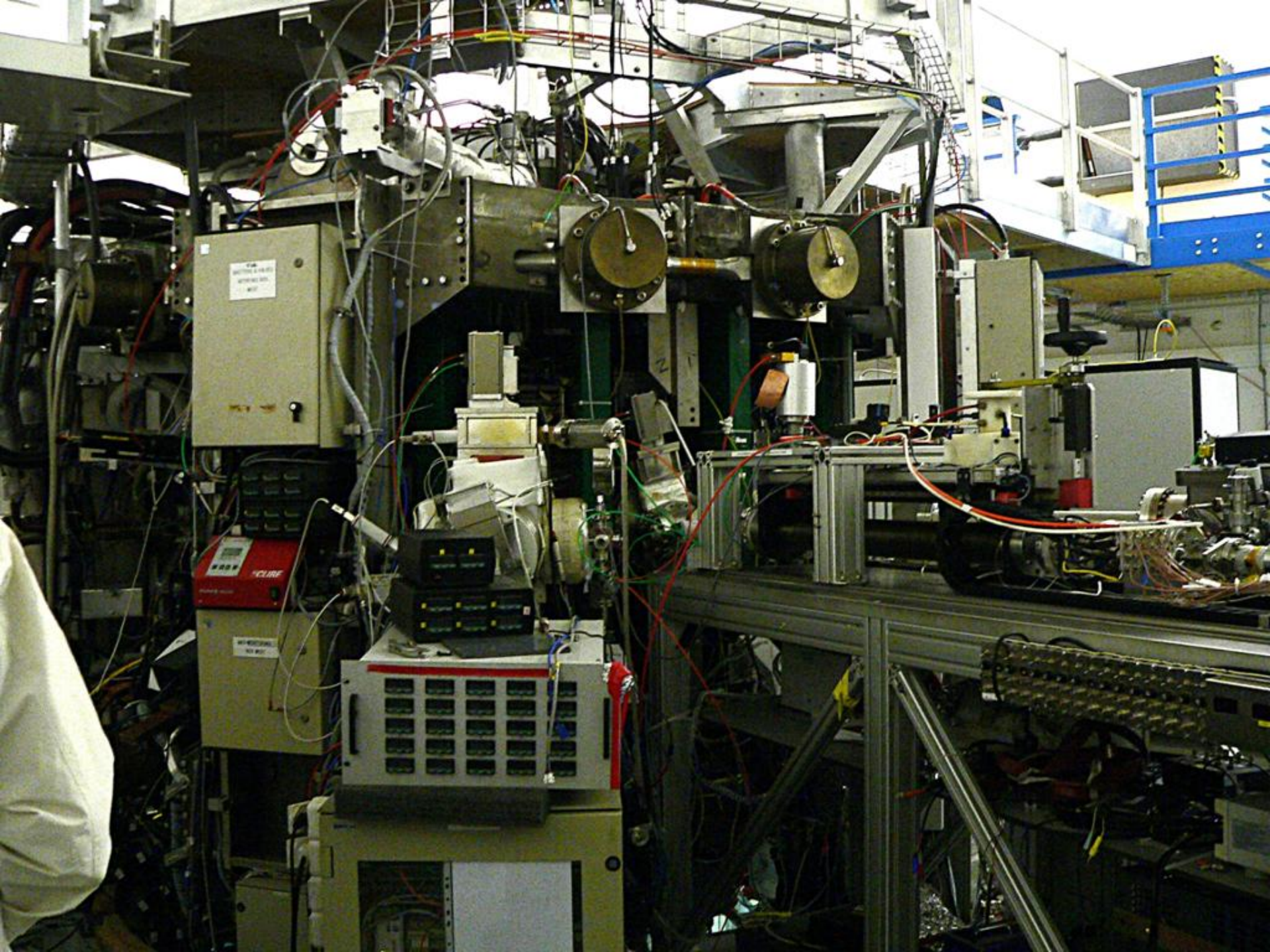
reset

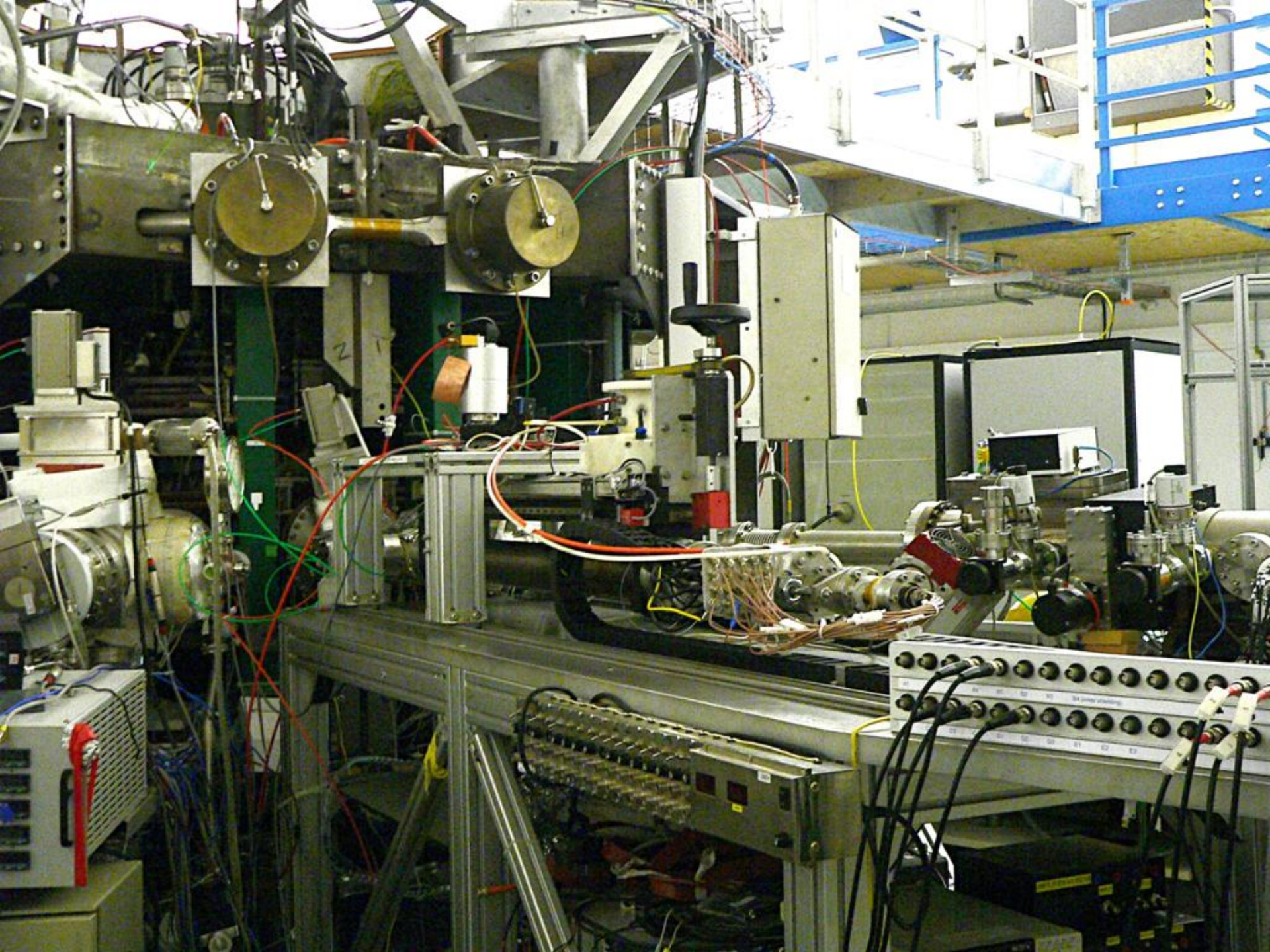


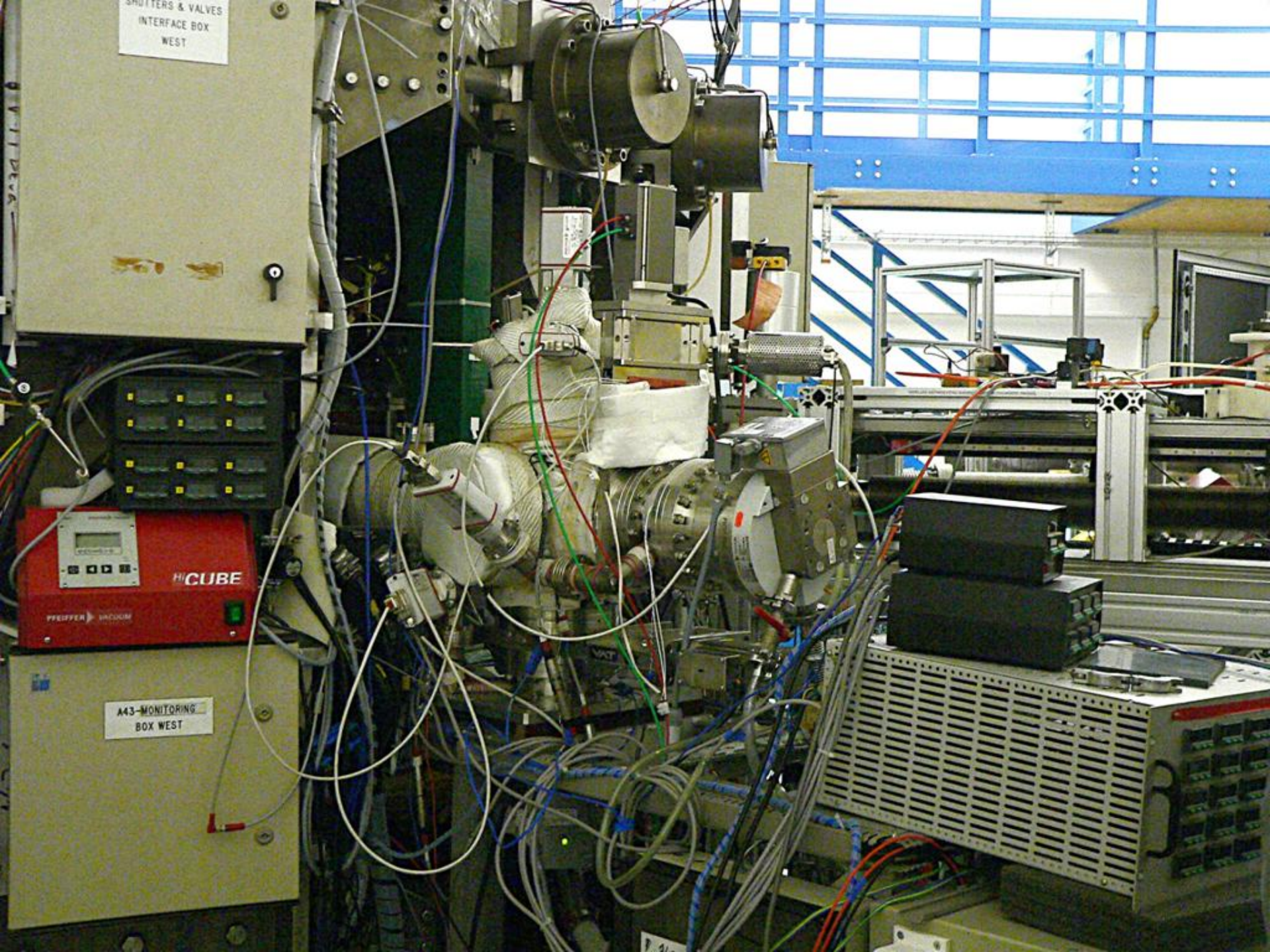










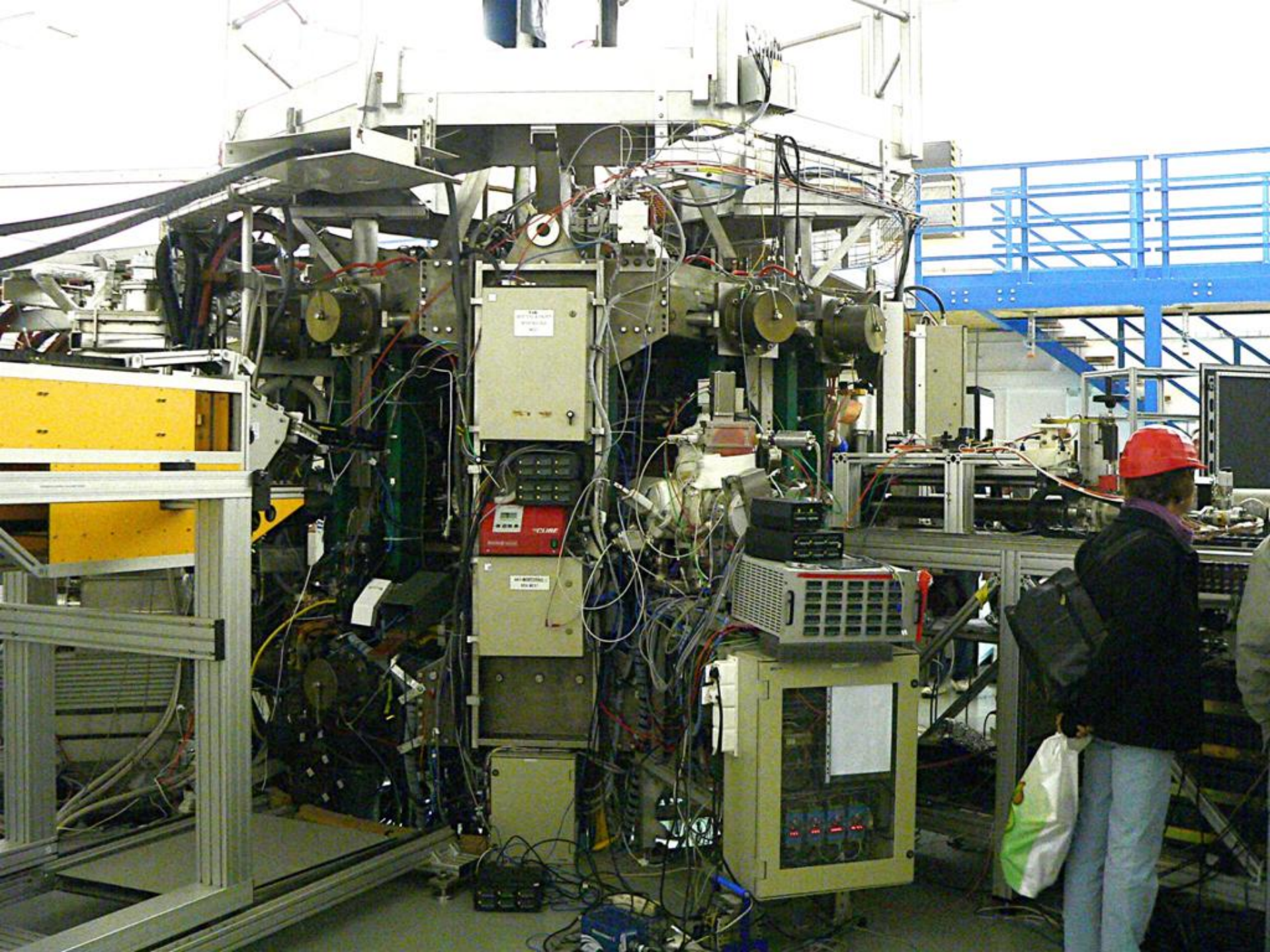


SHUTTERS & VALVES  
INTERFACE BOX  
WEST

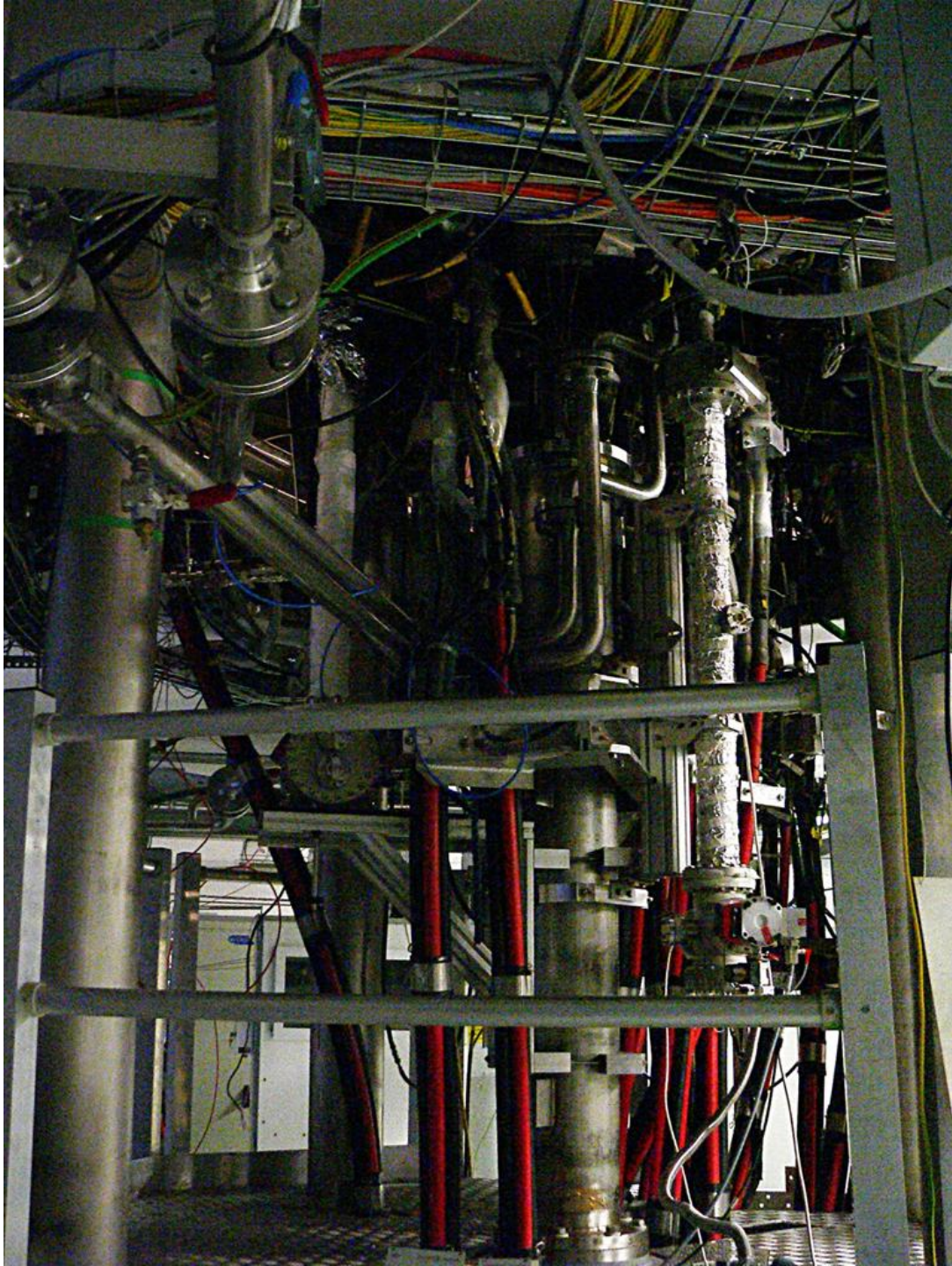
HiCUBE  
PFEIFFER VACUUM

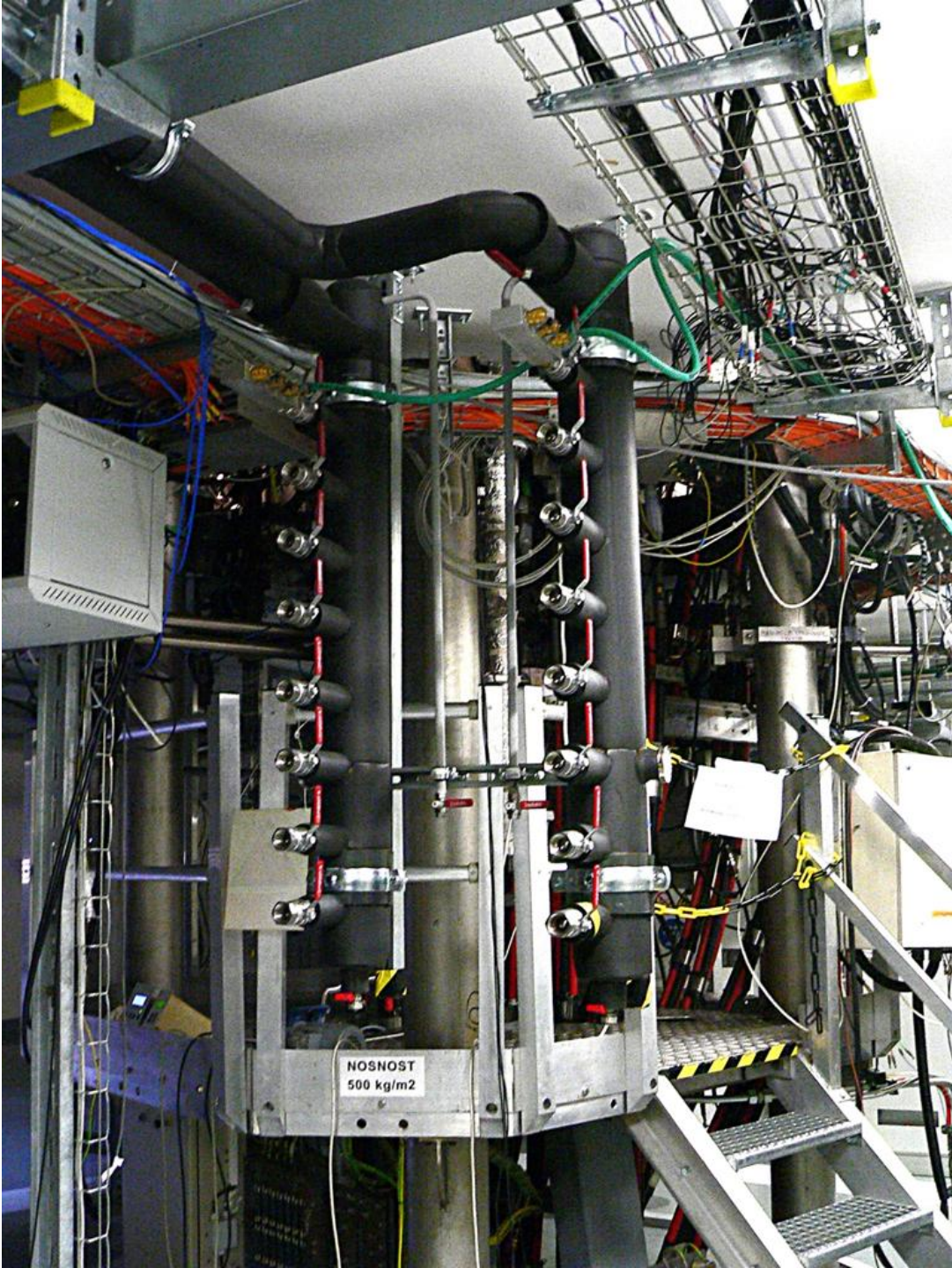
A43-MONITORING  
BOX WEST

Electronic rack with multiple modules and a handle.











NEVER ENTER  
FOR MAINTENANCE

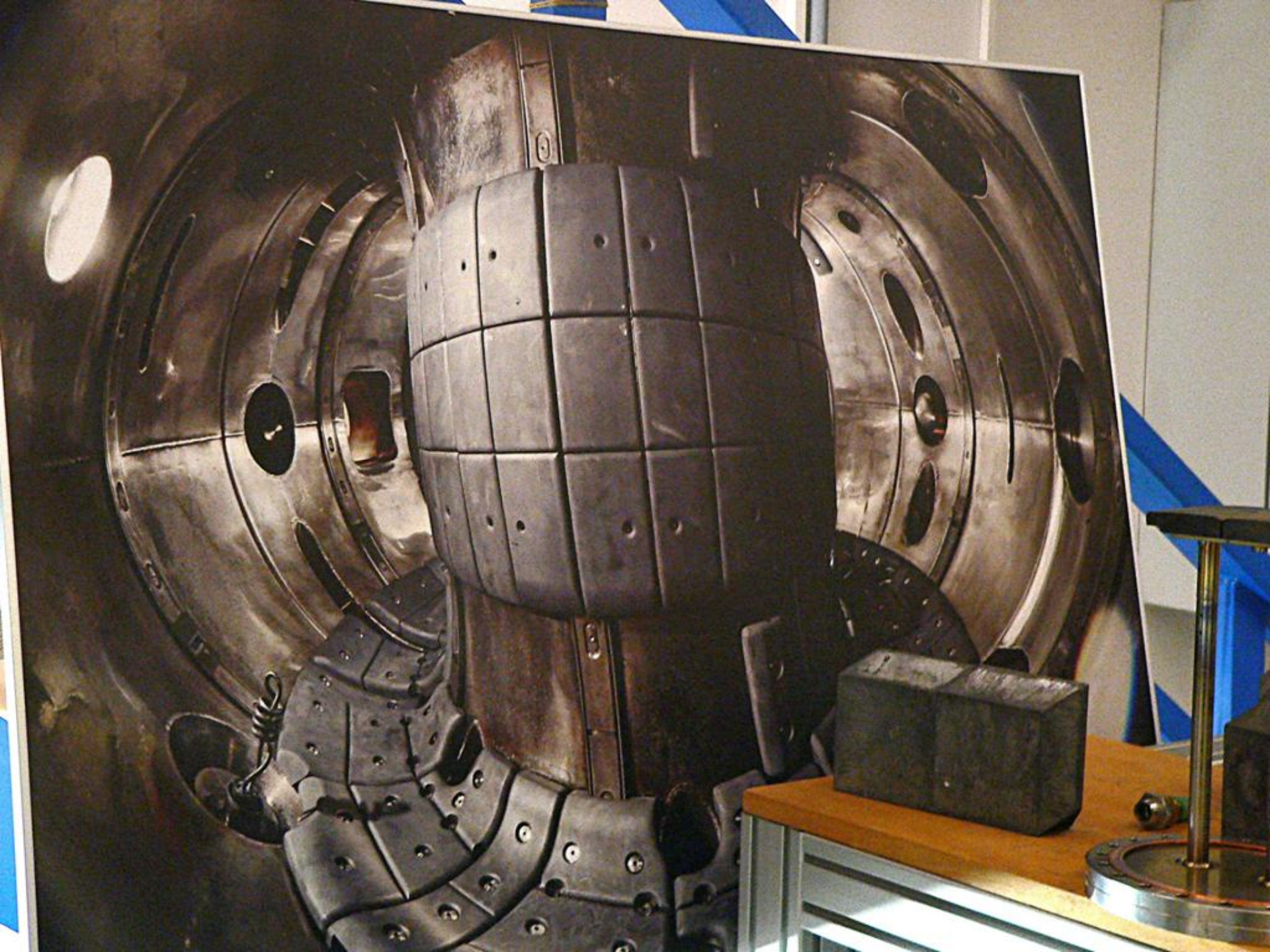
DO NOT ENTER  
ATTENTION THE MANIPULATOR IS LOCKED

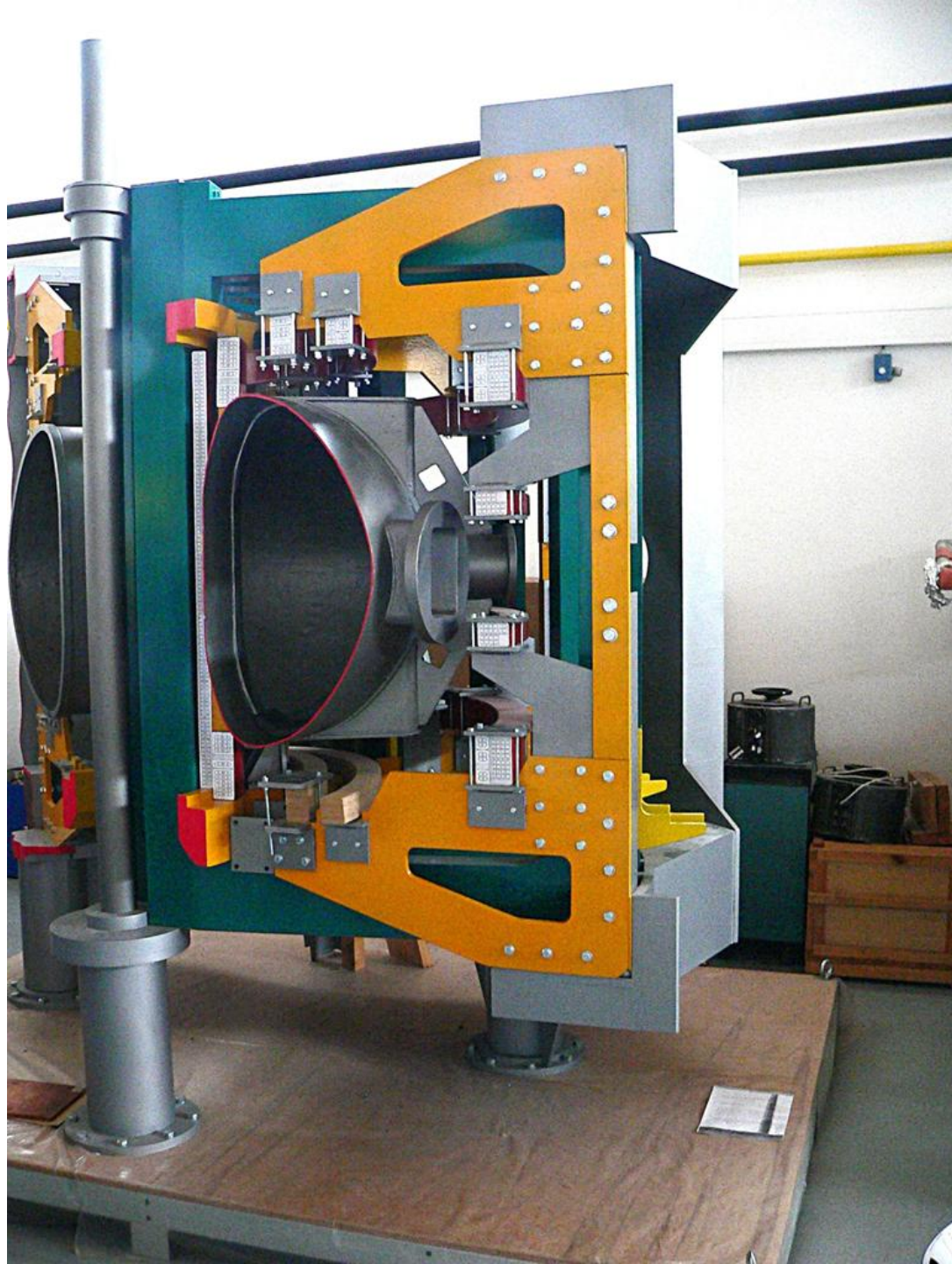
MANIPULATOR TRANSMITTER  
TO VOB

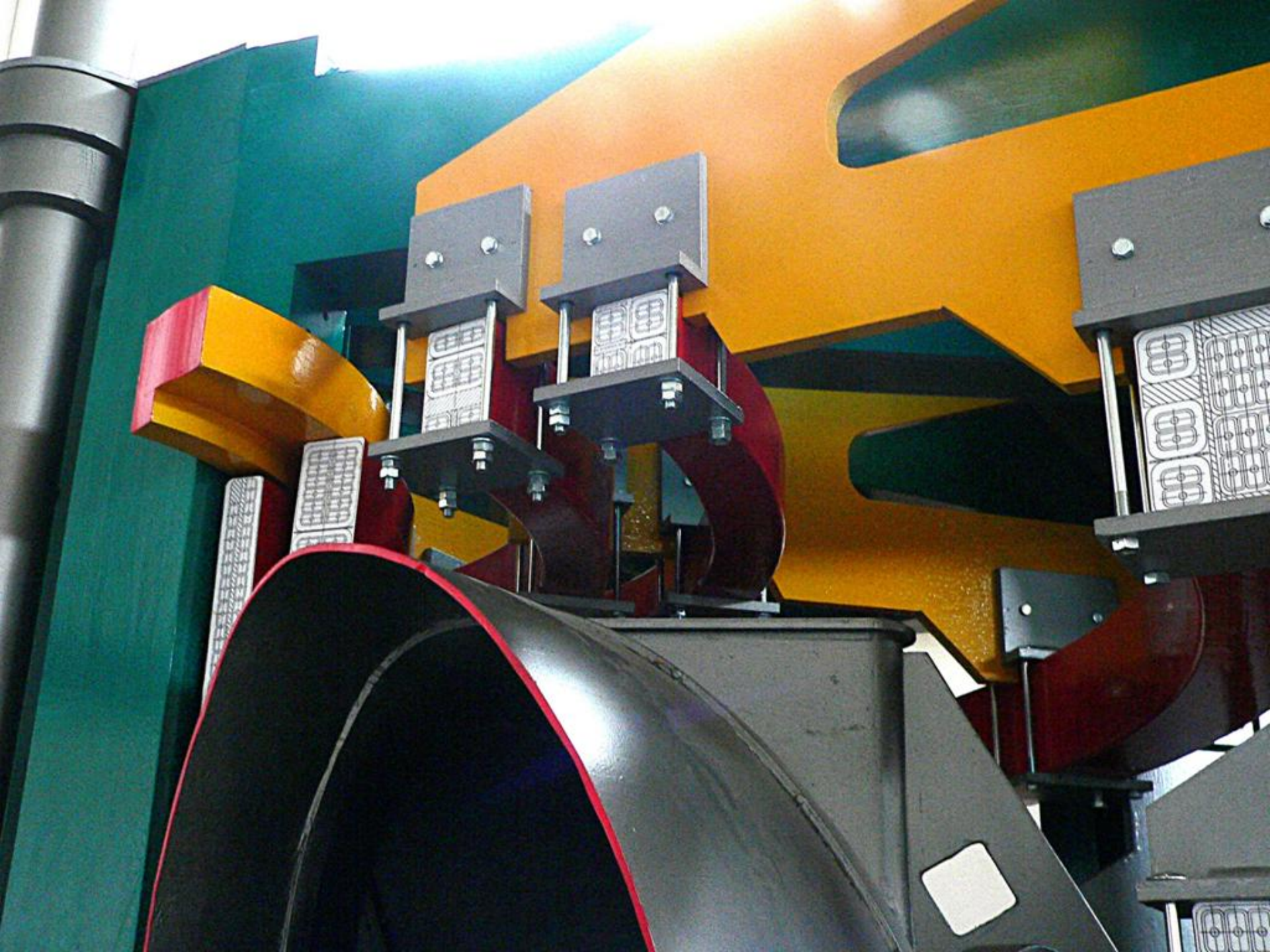
2F28

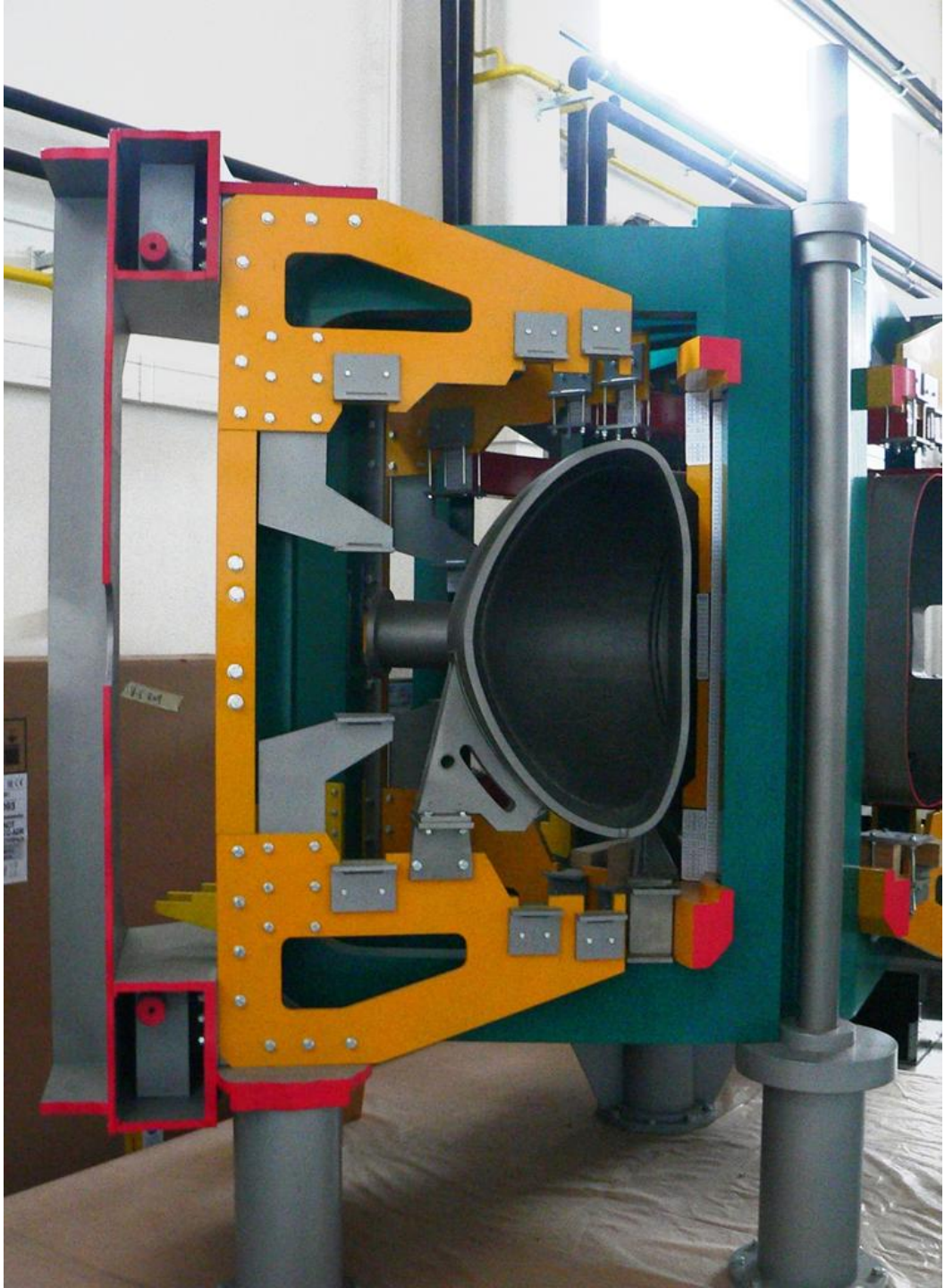
233B

167  
10









# Fyzika plazmatu: základ pro výzkum fúze

Hmota má v závislosti  
na své teplotě různé "stavy":



Plazma



Elektrony  
mají volný pohyb  
okolo atomových jader

Plyn



Elektrony obíhají  
okolo jader

Kapalina

Pevná látka





