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Jožef Stefan International Postgraduate School
and Young Researchers' Day CMBO

19 and 20 April

With fast ions faster to fusion energy

Use of micro-IBA to study of fuel and impurities species migration and retention in fusion reactors

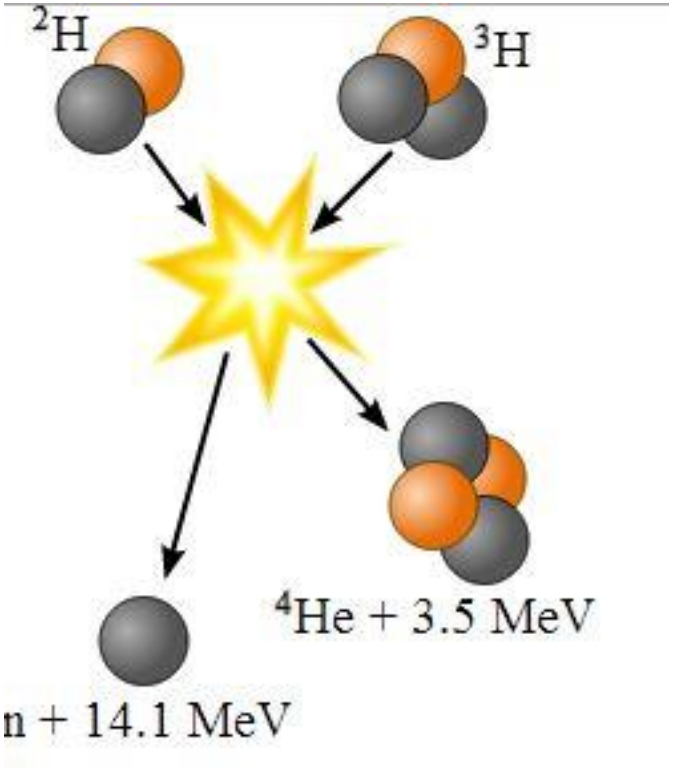
Mitja Kelemen,

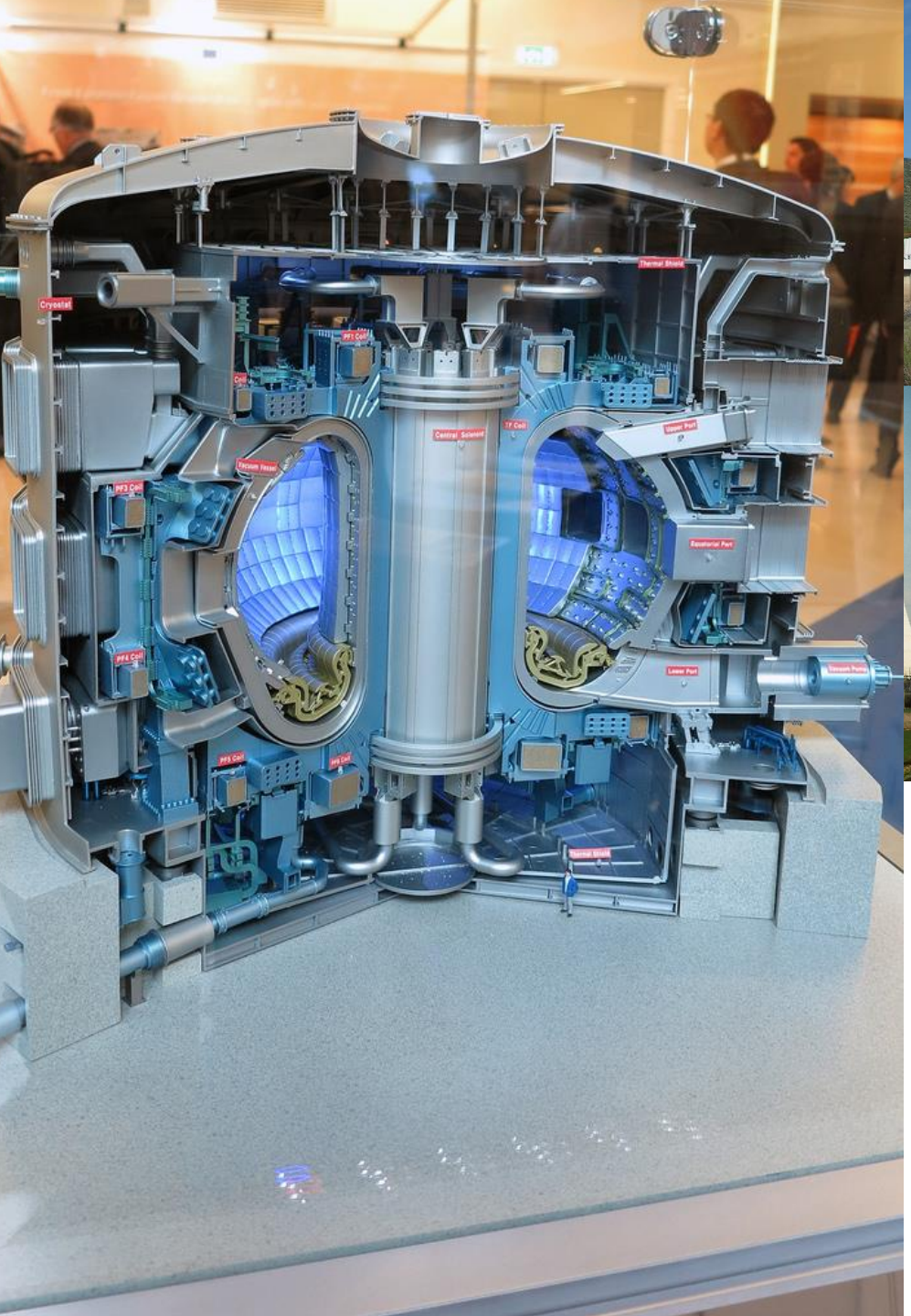
Department of low and medium energy physics – F2, Jožef Stefan Institute

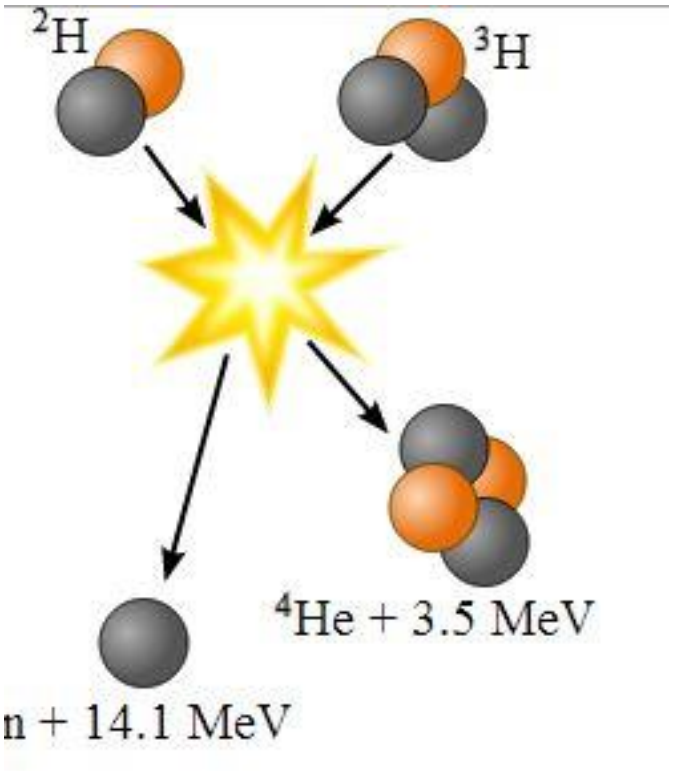
Jožef Stefan International Postgraduate School

Poster number: 14





^{2}H
^{3}H
$^{4}He + 3.5$ MeV
n + 14.1 MeV


Cryostat
Thermal Shield
PF1 Coil
Central Solenoid
TF Coil
Upper Port
Vacuum Vessel
PF2 Coil
Equatorial Port
PF4 Coil
Lower Port
Vacuum Pump
PF5 Coil
PF6 Coil
Thermal Shield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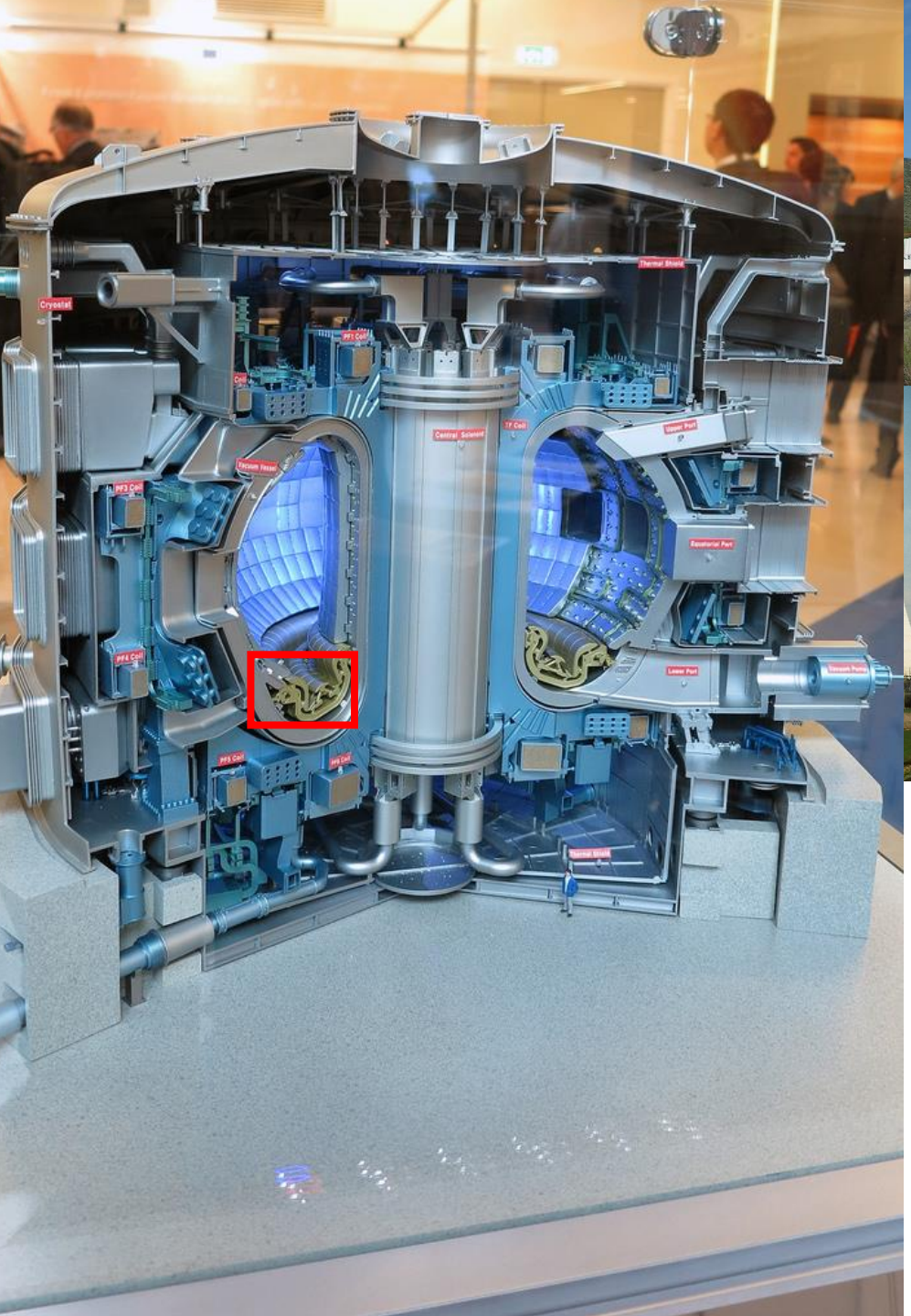
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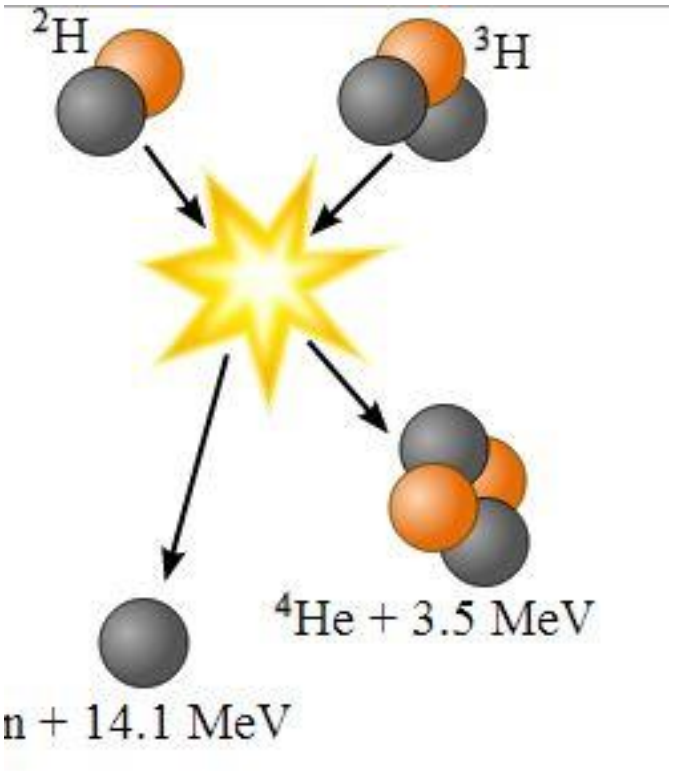
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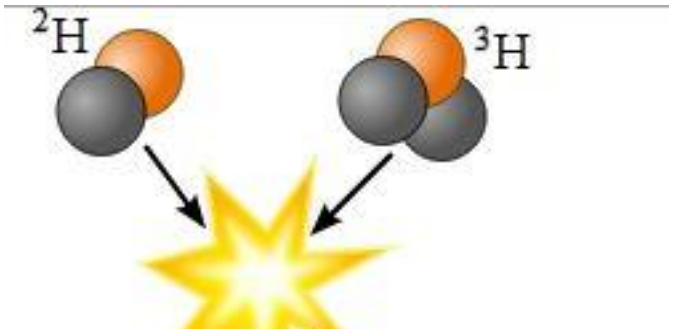
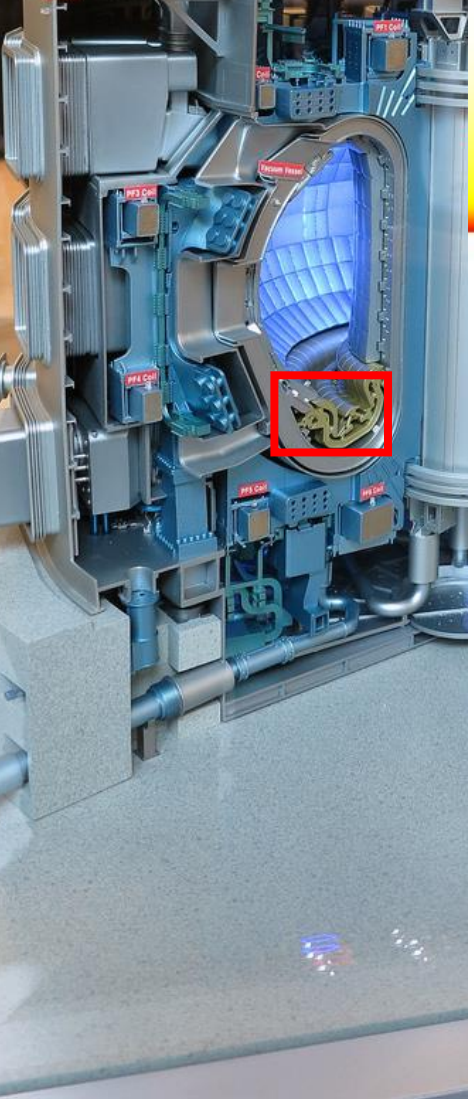
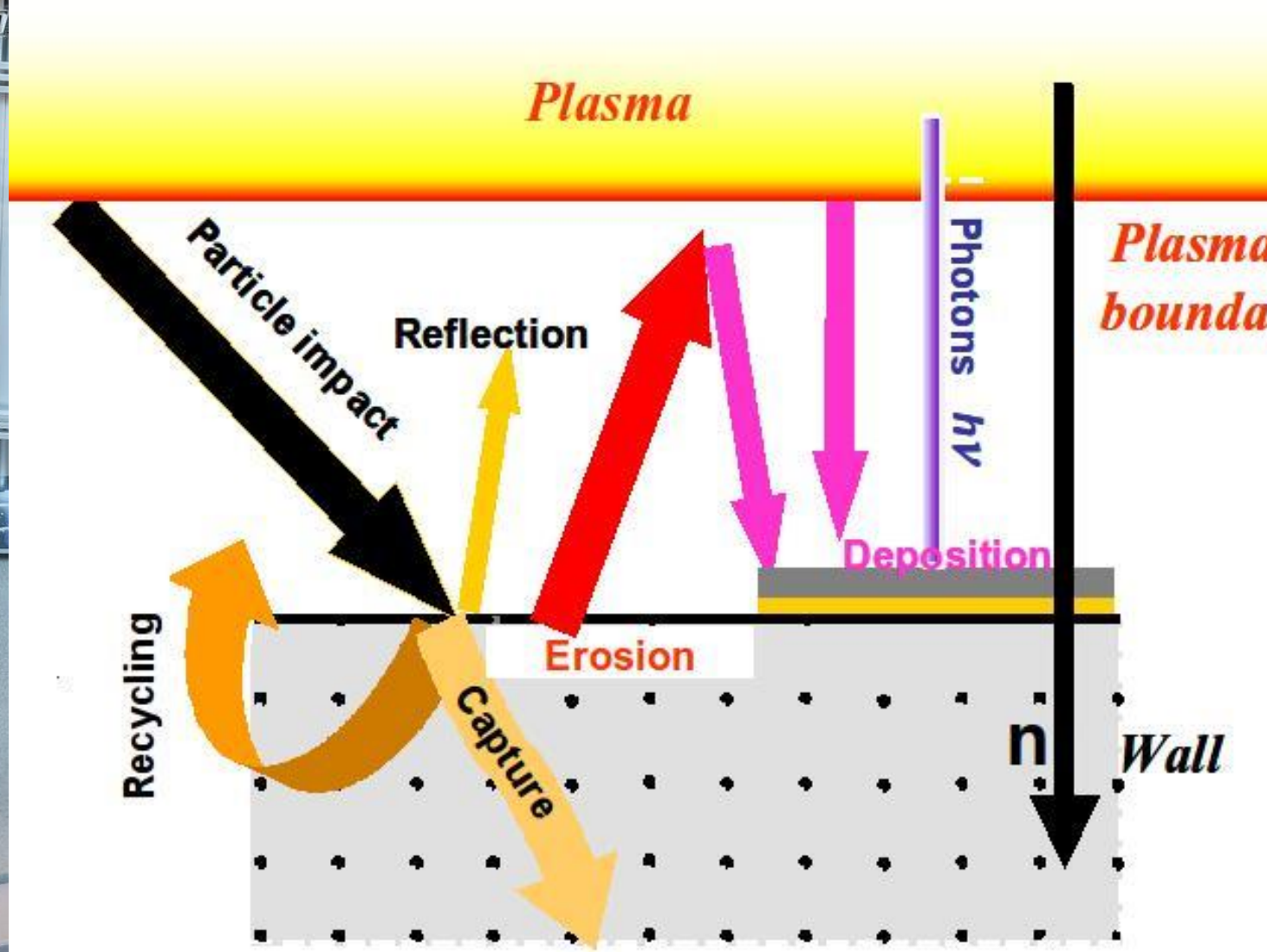
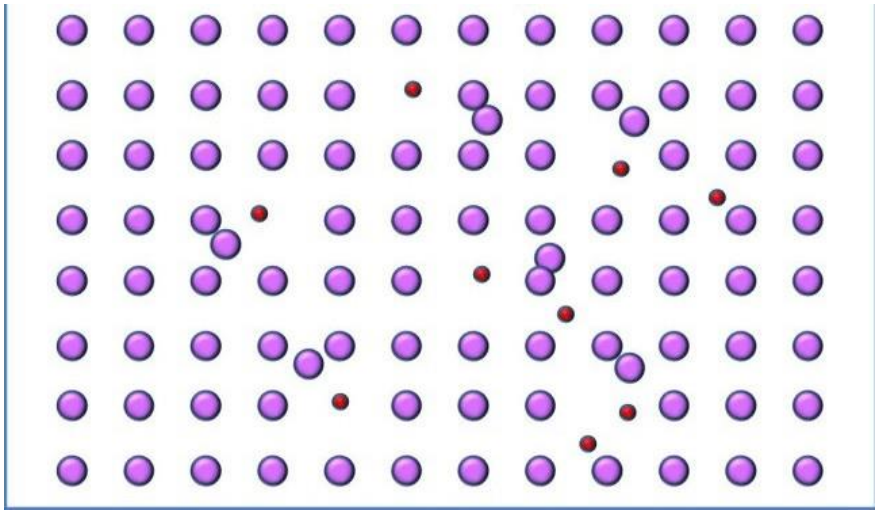
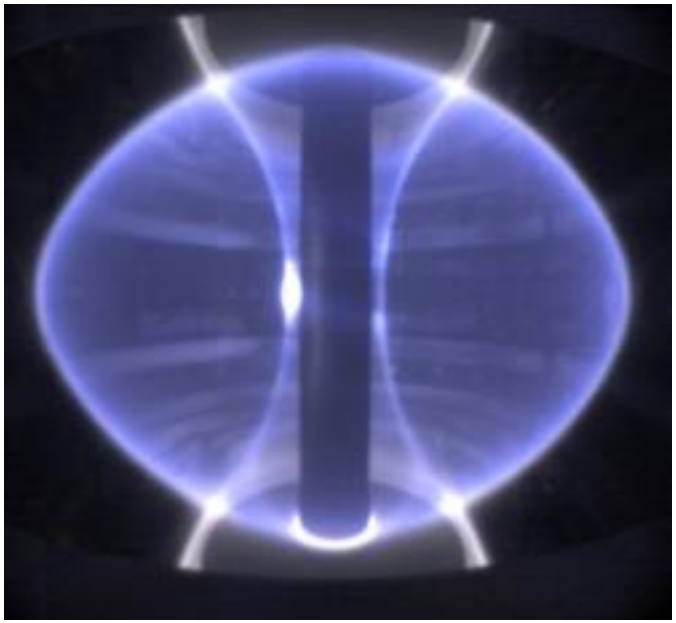

^{2}H
^{3}H



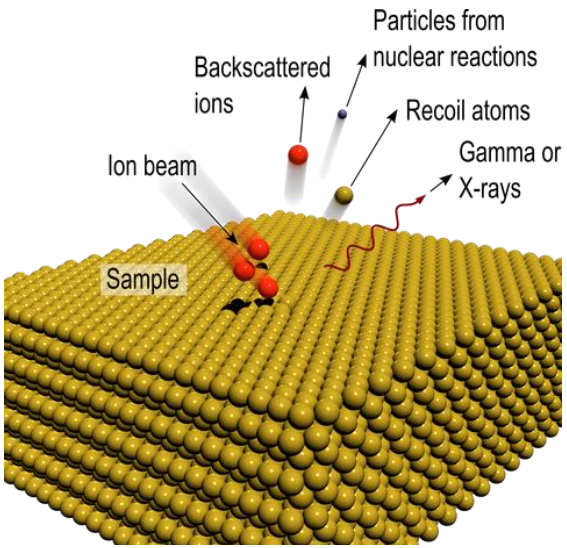

Plasma
Particle impact
Reflection
Photons hν
Plasma boundary
Deposition
Erosion
Recycling
Capture
n
Wall

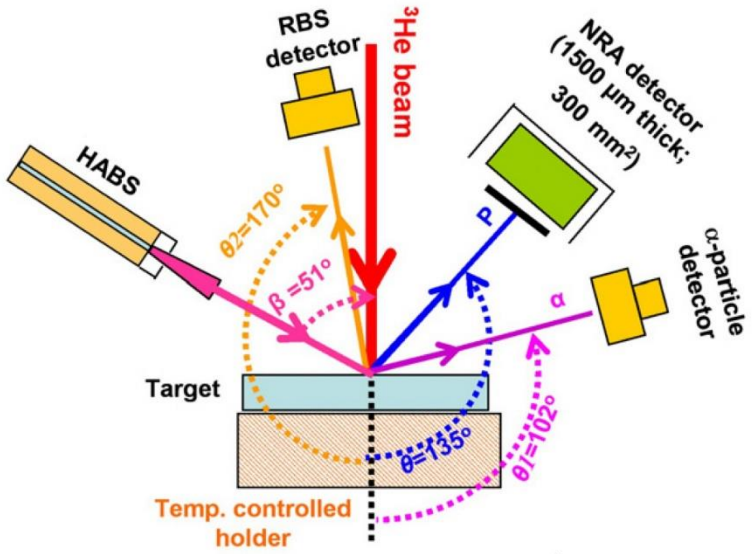




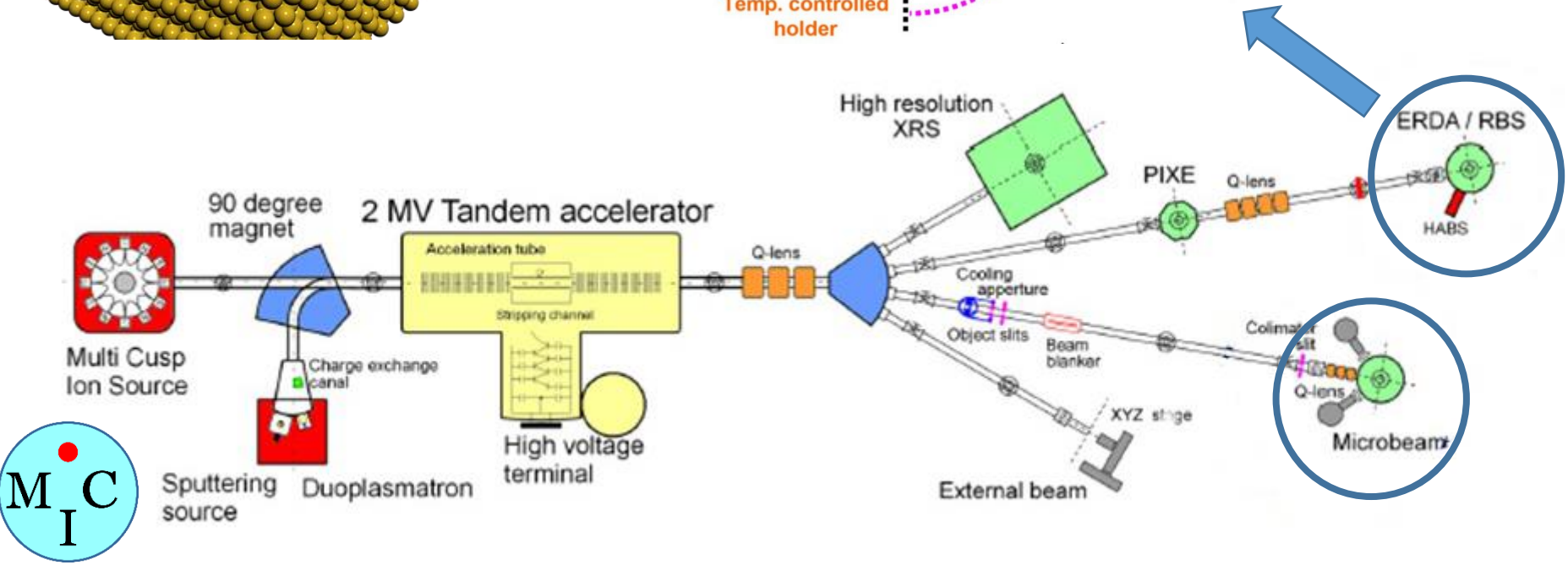
One of critical issues is accumulation of fusion fuel in the inner wall of fusion reactor.

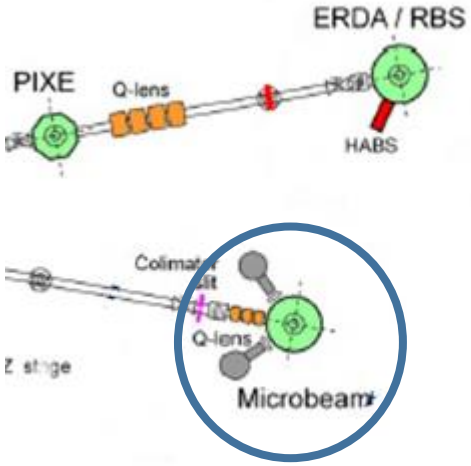
Studies of fuel retention with ion beam analytical (IBA) metod

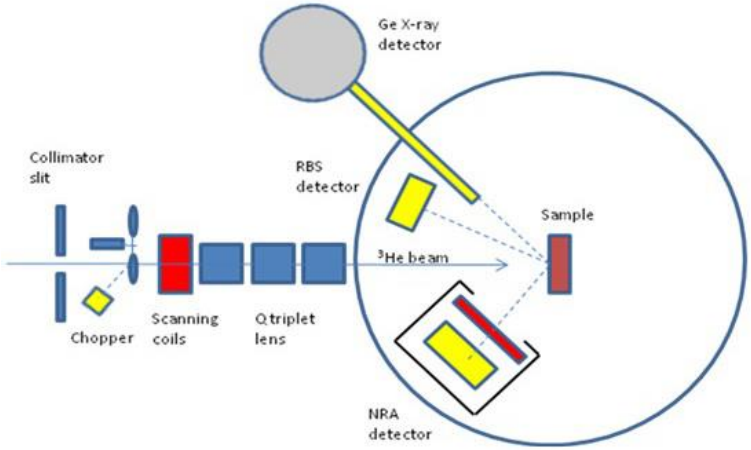




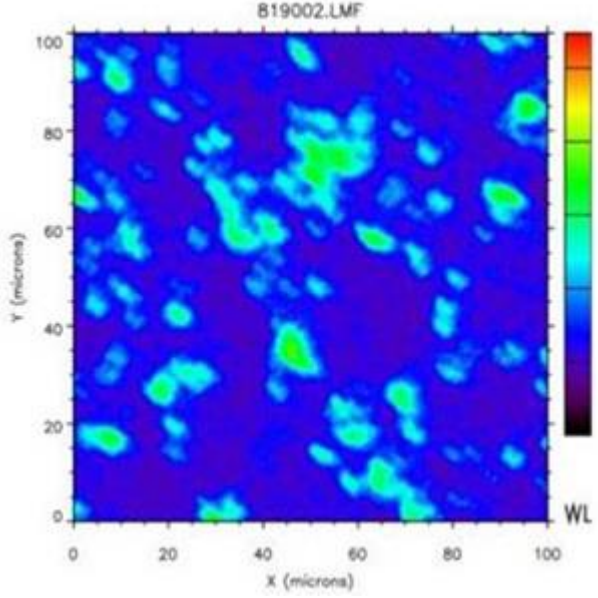
INSIBA- time evolution studies of fusion fuel retention via simulating reactor conditions







Microbeam experiment alows us to perform postmortem analysis of impurities and fusion fuel migration with high lateral resolution up to 500 nm.



Fast ions provide powerful nondestructive and quantifiable analytical tool for study processes of fusion fuel and impurity retention and migration in materials used in fusion reactors.

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