

## Annex 2: Competences sought for in the various ITPA Topical Groups:

### Overview of the vacancies:

Topical Group	Number of Vacancies
Diagnostics	2
Energetic Particles	<b>3 incl. one Stell. Representative</b>
Integrated Operating Scenarios	3
MHD, Disruptions & Control	1
Pedestal and Edge Physics	2
Scrape-off Layer & Divertor	1
Transport and confinement	<b>No vacancy</b>

The short paragraphs below describe the specific competences that are searched for by the various Topical Groups. Generic to all Topical Groups is that the members should have:

- good communication skills in English
- experience in managing/coordinating international groups
- be available to participate in person in the ITPA TG meetings during their 6-year mandate (typically two meetings per year). A key aspect for the selection of suitable candidates is their record of previous commitment to the work of the respective topical groups.

### Diagnostics (2 vacancies)

The Topical Group on Diagnostics is seeking two new members with at least one of the following competences:

- Outstanding expertise in laser diagnostics
- Outstanding expertise in real time control (RT)
- Outstanding expertise in microwave diagnostic techniques
- Successful candidates should further be (i) familiar with tokamak operation, (ii) experienced in analysing data, (iii) expert in mathematical or RT algorithms development, and (iv) trained in collaborating with diagnosticians

### Energetic Particles (2 vacancies plus one stellarator representative)

The Topical Group on Energetic Particles is seeking two new members with the following competences:

- A strong background in experimental plasma physics and physics of energetic ions
- Expertise in MHD spectroscopy methods
- Expertise in advanced integrated modelling, including interaction of fast ions with Alfvén waves
- Expertise in fast-ion loss detectors (FILD) and FILD measurements

With respect to the stellarator representative, an expert in fast-ion physics in stellarators, preferably with knowledge on ICE measurements and analysis is sought for.

## Integrated Operating Scenarios (3 vacancies)

The Topical Group on Integrated Operating Scenarios is seeking new members with expertise in one of the following areas:

- Integrated modelling for full plasma discharge predictions
- Control-oriented modelling of sensors and actuators and plasma dynamic response
- Experimental development of integrated scenario: core-edge optimised seeded plasma
- Experimental development of integrated scenario: small/no ELMs plasma

## MHD, Disruptions & Control (1 vacancy)

The Topical Group on MHD, Disruptions & Control is seeking for a new member with the following competences:

- Expert knowledge in theory, simulation, verification and validation
- Extensive experience in running codes such as JOEK, NIMROD, DREAM, etc.
- Extensive experience in modelling of disruption forces, the thermal quench, disruption mitigation and the harmful effects of Runaway Electrons
- Extensive experience in modelling/simulation of ELMS, NTMs, plasma detachment, impurity sputtering
- In general: familiarity with MHD codes, MHD theory and magnetic diagnostics
- In-depth expertise in the structure, content and practical use of the EUROfusion Disruption Database

## Pedestal and Edge Physics (2 vacancies)

The Topical Group on Pedestal and Edge Physics is looking for 2 new members with expertise in:

- Theory and both linear and non-linear numerical modelling expertise for ELMs and RMPs with JOEK and other codes
- Ideal and resistive pedestal MHD stability
- Validation of simulations by comparison with experiments on existing machines and applications to predictions for ITER
- Ability to bring extended EU and international collaboration in this area to the PEP group
- Theory and numerical expertise (mainly Gyrokinetic) of microturbulent transport in the pedestal region

## Scrape-off Layer & Divertor (1 vacancy)

The Topical Group on scrape-off layer & divertor is seeking one new member with competences and interests as listed below:

- Proven knowledge of the major fusion or plasma facilities in Europe and worldwide
- Strong expertise in plasma-wall and/or plasma-material interactions in tokamaks or in linear machines
- Experience in one or several of the following research areas relevant for the new ITER baseline: boronizations, main-chamber W erosion, and W transport in the scrape-off layer
- Capabilities in coordinating multimachine experiments and analyses of the obtained data
- Additional experience on the response of plasma-facing components to large power loads appreciated