

Template Progress Report

CRP: Utilization of the Network of Small Magnetic Confinement Fusion Devices for Mainstream Fusion Research

Summary of work done during the CRP thus far

Tokamak GOLEM with respect to its potency and educational mission has preferably contributed in the field of educational activities and testing the HTS technology in the real tokamak operation.

CRP overall objective	Contribution of your CRP research work:
The overall objective of this CRP is to contribute to streamlining the contributions of small magnetic confinement fusion devices to mainstream fusion research by establishing a network of cooperation enabling coordinated investigations of topics of relevance to physics, diagnostics and technology issues of next step fusion devices such as ITER and DEMO.	<ul style="list-style-type: none"> * Exploitation of High temperature superconductors (HTS) on the GOLEM tokamak * Education and training
Specific Research Objectives	Contribution of your CRP research work
Establishment of a network of small magnetic confinement fusion devices	Coordinated HTS study with the Tokamak Energy ST25 tokamak
Utilization of the network to perform joint and comparative experiments on a number of selected devices	
Utilization of the network to support technology development, e.g. novel diagnostics, materials and techniques	Exploitation of High temperature superconductors (HTS) on the GOLEM tokamak
Utilization of the network to support modelling analysis and the development of simulation and communication tool	
Provide training and education activities to members of the network	Number of educational activities based on remote operation of the tokamak, see http://golem.fjfi.cvut.cz/newwww/?p=Chronicle/edu . More then 1000 discharges configured and preformed by students remotely over the Czech republic borders.

Overall Assessment of Progress Towards Achieving Objectives

The GOLEM tokamak has contributed to the mainstream of the fusion research worthy with respect to the history of the facility, its parameters and currently defined mission.

Activities	Current Status
Organize Joint Experiments	Participation in the IAEA JE 2012, 2013 and 2014

Expected Research Outputs	Your Achievement so far
Detailed documentation and publication of results of joint experiments investigating dedicated topics together with the necessary analysis and conclusions	<p>M. Gryaznevich et al.: Progress in application of high temperature superconductor in tokamak magnets, Fusion Engineering and Design, 88 (9-10):1593-1596,2013.</p> <p>V. Svoboda et al.: Tokamak GOLEM for fusion education - chapter 5. Presentation at the 41st EPS Conference on Plasma Physics, Berlin, Germany, 38F:P4.141,2014.</p>
Development of prototypes of specific (i) fusion-relevant diagnostics, (ii) partial or full in-vessel components, and (iii) components of systems auxiliary to the main confinement device	
Development of prototypes of applicable fusion-relevant simulation and communication tools	
Production of doctors in sciences (PhD)	