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*Multiscale Modelling for Fusion and Fission Materials*

Project acronym: M4F

H2020 EURATOM WP 2014-2018

Grant Agreement: 755039

**Programme of M4F Final Workshop**

***CIEMAT, Madrid, Spain***

***25-26 November 2021***

Hybrid online and in-person workshop:

25 November: only afternoon 13:30-18:00

26 November: only morning 9:00-13:00

OBJECTIVES

Close to the end of the M4F project[[1]](#footnote-1), technical talks will report on its main achievements across work-packages, despite the difficulties brought by the Covid19 pandemic to the continuity of the work. The impact of the project so far will be highlighted in keynote talks. The global picture will be provided by suitable introduction and closing remarks by the Euratom officer.

WORKSHOP PROGRAMME

**DAY 1 – Thursday 25TH November 2021 – 13:30-18:00**

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| **Introduction – Chair: M. Serrano** | | |
| **13:30-13:40** | **Welcome and connection time for online participants – M. Serrano** | |
| **13:40-14:00** | **Main goals and achievements of the M4F project** | **L. Malerba, CIEMAT – M4F Coordinator** |
| **14:00-14:15** | **Highlights of Domain 1 – Irradiated Microstructure** | **P. Olsson, KTH, DM leader** |
| **14:15-14:30** | **Highlights of Domain 2 – Plastic Deformation** | **E. Gaganidze, KIT, DM leader** |
| **14:30-14:40** | **Break** | |
| **Keynote talks – Chair: L. Malerba** | | |
| **14:40-15:20** | **Advances on plastic flow localisation in connection with design rules for F/M steels** | **J. Aktaa, KIT** |
| **15:20-16:00** | **Good practices for self-ion irradiation for fission and fusion applications: where do we stand?** | **C. Kaden (Heintze), HZDR, and M.J. Caturla, UA** |
| **16:00-16:15** | **Break** | |
| **Technical talks- Chair: M.J. Caturla** | | |
| **16:15-16:45** | **Advanced microstructure evolution models: application to Fe alloys under neutron and ion irradiation** | **N. Castin, SCK CEN** |
| **16:45-17:15** | **Atom probe studies of neutron and ion irradiated F/M alloys** | **C. Pareige, GPM/CNRS** |
| **17:15-17:45** | **Rationalization of experimental observation in irradiated F/M alloys in the light of microstructure evolution models** | **M. Konstantinović, SCK CEN** |
| **17:45-18:00** | **Discussion time and closure of first day** | |

WORKSHOP PROGRAMME

**DAY 2 – Friday 26TH November 2021 – 9:00-13:00**

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| **Technical talks (continued) – Chair: E. Gaganidze** | | |
| **9:00-9:10** | **Welcome and connection time for online participants** | |
| **9:10-9:40** | **Nanoindentation for mechanical property assessment of ion-irradiated ferrous alloys** | **P. Hähner, EC/DG-JRC** |
| **9:40-10:10** | **Test protocols to fingerprint and quantify irradiation damage using nanoindentation measurement of plasticity size effects** | **N. Jennett, U. Coventry** |
| **10:10-10:40** | **Contribution of DFT and atomistic models to the understanding of deformation processes under irradiation in F/M alloys** | **G. Bonny, SCK CEN** |
| **10:40-11:00** | **Break** | |
| **Technical talks (continued) – Chair: P. Olsson** | | |
| **11:00-11:30** | **Dislocation dynamics: rationalisation of shear band formation through models** | **C. Robertson, CEA** |
| **11:30-12:00** | **Homogenization: mean field versus full field models and comparison with experiments** | **D. Gonçalves, CEA, and I. Simonovski, EC/DG-JRC** |
| **12:00-12:30** | **Deformation and Damage behaviour modelling, input from experiments and results** | **R. Rajakrishnan, KIT** |
| **12:30-12:45** | **Closing remarks from the Euratom officer** | **M. Dzubinsky, EC/DG-RTD** |
| **12:45-13:00** | **Closure of the meeting** | **L. Malerba** |

1. L. Malerba et al. (2021). Multiscale modelling for fusion and fission materials: the M4F project. Nuclear Materials and Energy (2021) 101051. <https://doi.org/10.1016/j.nme.2021.101051> [↑](#footnote-ref-1)