**EUROMAT 2017/ Symposia Structure/Area B**

**B.1**

**Symposium title: Advanced High Strength Steels**

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**Summary**

Modern steel concepts aim at improved properties by tailoring the microstructure. Three trends are of major interest in nowadays materials' development activities: the decrease of the structural length of microstructural constituents towards nanosized quantities, the increase of alloying level and by this the interaction of different elements in enriched zones, and finally more complex and adjusted robust processes activating several metallurgical mechanisms for controlled microstructure development.

This symposium invites contributions of newly developed steels for structural applications, studies of the control of process kinetics for multiphase microstructures and the microstructure-property relationships of advanced high strength steels. New design methods including both experimental approaches and simulation aspects as well as new design concepts like damage tolerance of self-healing behavior will be covered as well.

The use of advanced steels for light-weight design like in car bodies, for power generation like in offshore windmills or high-efficient turbines, for infrastructure like in pipelines, for chemical plants or other challenging applications will be highlighted. The metallurgical processing of these materials, their manufacturing, their testing, usage and recycling require new concepts and a sophisticated understanding of the physical phenomena involved. The symposium will provide a survey of recent steel developments, the usage of new tools and methods for materials characterization and the progress in understanding complex materials.

<u>Topics to be covered:</u>

- Advanced high strength steel development
- Light-weight steels

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| | ○ Steels for press hardening<br>○ Characterization of microstructures<br>○ Partitioning of alloying elements<br>○ Micro- and macro segregation<br>○ Process development for advanced high strength steels<br>○ Through process modelling for advanced high strength steels<br>○ Application of advanced high strength steels |