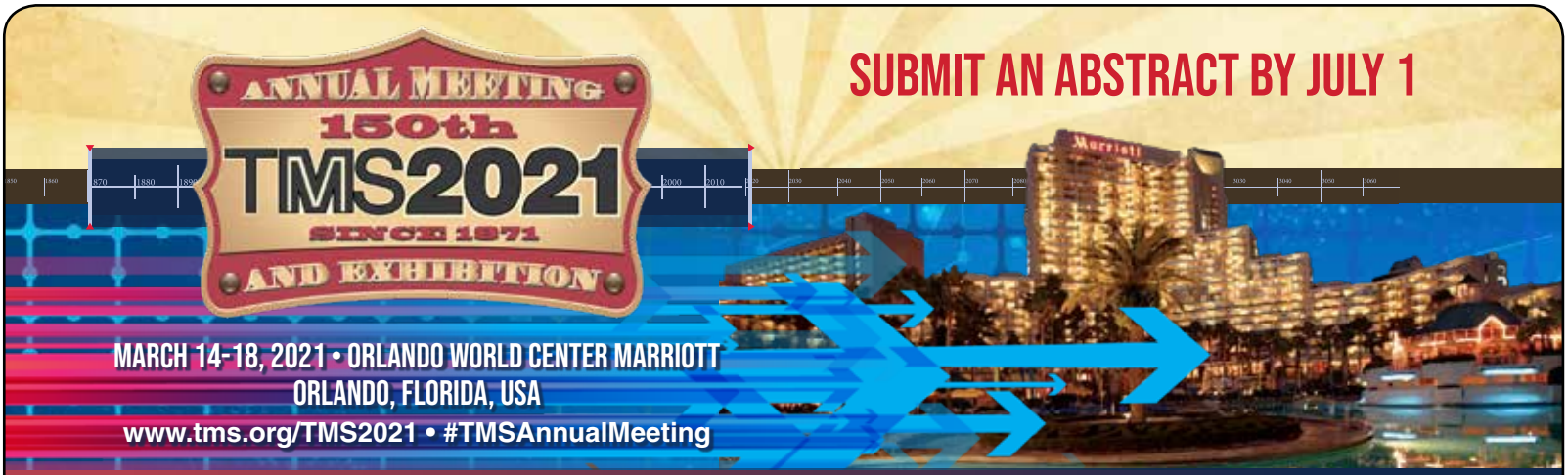

SUBMIT AN ABSTRACT TO:

ADVANCED MATERIALS

HIGH ENTROPY ALLOYS IX

In contrast to conventional alloys, which are based upon one principal element, HEAs have multiple principal elements, often five or more. The significantly high entropy of the solid solution can potentially stabilize the solid-solution phases in face-centered-cubic (FCC), body-centered-cubic (BCC), and hexagonal close-packed (HCP) structures against intermetallic compounds. Moreover, carefully-designed HEAs possess tailorable properties that far-surpass their conventional alloys. Such properties in HEAs include high strength, ductility, corrosion resistance, oxidation resistance, fatigue and wear resistance. These properties will undoubtedly make HEAs of interest for use in biomedical, structural, mechanical, and energy applications. Given the novel and exciting nature of HEAs, they are poised for significant growth, not unlike the bulk metallic glass or nanostructured alloy scientific communities, and present a perfect opportunity for a new symposium.

Topics of interest include but not limited to:

1. Material fabrication and processing, such as homogenization, nanomaterials, and grain-boundary engineering
2. Advanced characterization, such as neutron scattering and three-dimensional (3D) atom probe
3. Thermodynamics and diffusivity: measurements and modeling
4. Mechanical behavior, such as fatigue, creep, and fracture
5. Corrosion, physical, magnetic, electric, thermal, coating, and biomedical behavior
6. Theoretical modeling and simulation using density functional theory, molecular dynamics, Monte Carlo simulations, phase-field and finite-elements method, and CALPHAD modeling
7. Industrial applications

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