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17th International Conference on Aluminium Alloys – ICAA17

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Our world is changing rapidly. Climate change, the exhaustion of resources, are strong drivers for modifying profoundly the way we travel, the way we heat and cool our buildings, the way we consume products and services. Among the industrial materials, aluminium has a key role to play in these transitions. Although the energy required to reduce alumina into aluminium is very large, it is then almost infinitely recyclable and makes it possible to build lighter and stronger structures, among many applications. The current research on aluminium alloys is reflecting these evolutions, where new alloys, new processing methods, are invented to address the growing needs of vehicle weight reduction, recyclability, and durability. The 17th International Conference on Aluminium Alloys (ICAA), for the first time in a virtual format, has gathered more than 350 scientists from all continents to exchange on the most recent advances on all aspects of processing, microstructure and properties of Aluminium alloys. These proceedings comprise the published version of a subset of the 220 presentations given at this conference, in full open access.

The papers in the proceedings are organized in plenary lectures, and 8 symposia listed below. Among the plenary lectures, six were devoted to Early Career Research Award recipients, who are PhD students and post-doctoral fellows selected among applicants, based on the excellence of their research and their publication, which appears in these proceedings.

- Plenary lecture & ECR award recipients
- Symposium 1: Phase transformations
- Symposium 2: Strength, plastic deformation & formability
- Symposium 3: Durability: fatigue, fracture, corrosion & surface treatments
- Symposium 4: Thermomechanical processing, texture & recrystallization
- Symposium 5: Casting & solidification, recycling, fundamentals of additive manufacturing
- Symposium 6: New directions in alloy and process development I: additive manufacturing
- Symposium 7: New directions in alloy and process development II: joining, severe plastic deformation, emerging processes
- Symposium 8 : Advanced characterization