



16. CQU; Chongqing University

Contributions to GRAIN2

GRAIN2

KTG3 and KGT4 contributor

CQU– Chongqing University:

- Public University, founded in 1929, located in Shapingba District, Chongqing, China
- “Prospering the country and Chongqing city with science-and-technology and education. Taking root in Chongqing, finding a foothold in the Southwest, facing the West, Serving the whole nation, stepping towards the world”

Technical contribution:

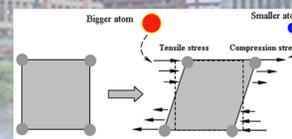
- KGT3: State of the art and research related to environmental friendly materials and structures
 - Understanding of the relationship of microstructure and mechanical and performance properties of high strength light metal alloys
 - Developing highly comprehensive light weight alloys applied on airplanes
- KGT4: State of the art and research related to CNS/ATM for greener air transport
 - QoS based Networking of civil airplanes to facilitate new CNS/ATM
 - Effective spectrum allocation and frequency reuse in L band and C band

Projects:

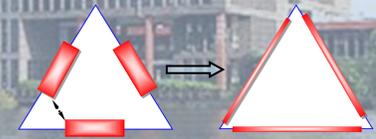
- Research on phase transformation and strengthening and toughening of light metal alloys
- Research on deformation mechanism and microstructure evolution and fine control during processing
- Research on development of advanced microstructure characterization methods
- Research on link technology of relay communication in macro cellular network for civil aircraft mobile communications
- Research on networking and key technologies for civil aeronautical broadband mobile communication for oceanic flight routes

Future activities:

- New ideas on diffusion-shear nucleation mechanism and the strengthening mechanism by controlling the aspect ratio of precipitates; Controlling the orientation of plate precipitate by alloying can impede the slip and twinning in alloys effectively

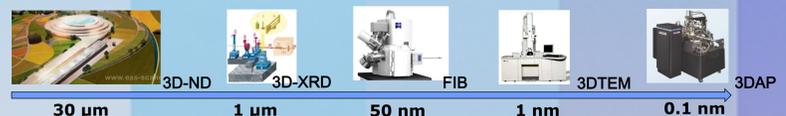


Diffusion-Shear nucleation mechanism



Strengthening by modification the aspect ratio of planar precipitate

- New technologies on microstructure characterization from atom to micron scale;
- Atomic resolution; 3D imaging or reconstruction ; In-situ dynamic investigations



- Research on QoS based Scheduling strategies and routing technologies.
- Research on effective spectrum allocation and frequency reuse for new CNS/ATM system

Selected Publications:

- Y. H. Zhang, etc. Three-dimensional investigation of recrystallization nucleation in a particle-containing Al alloy, Script. Mater., 2012, 67(4), 320.
- Y. L. Wei, etc. Dislocations, boundaries and slip systems in cube grains of rolled aluminum, Script. Mater., 2011, 65(4), 355.
- WANG. Z. M; ZENG. X. P. Situations and Developments for Civil Aviation mobile communications, Proceeding of GRAIN2 kick-off meeting from Chinese delegation, 2013, p226

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