DISCIPLIN	RESEARCH CORNERSTONE	DESCRIPTION	SCIENCE TARGET	POTENTIAL APPLICATION
MATERIAL SCIENCES	Thermophysical Properties	Utilise the extended possibilities for containerless processing in Space to measure critical properties of highly reactive liquid metals	Measurements, and with higher accuracy, of the properties of stable and meta-stable (under-cooled) liquid metals	Enhance the reliability of numerical simulation and control of casting facilities in metallurgical facilities
	New Materials, Products and Processes	Understanding the physics of solidification and crystal growth of metals, organic and inorganic materials and biological macromol-ecules	Quantify the influence of the growth conditions on the homogeneity and defects in crystals, including protein crystals. Enhance numerical models of the microstructure formation in metals and alloys	Improve and validate models for predicting grain structure formation in industrial castings. Develop processes towards new metallurgical products. Improve efficiency in production of industrial crystals. Contribute to tailored drug design.