Privatization of space exploration has allowed for a new wave of innovative companies to enter the space exploration arena. In just a few years these innovative companies have joined the race and are at the forefront of bringing new and innovative technologies to the space exploration market. This panel will focus on the different challenges and opportunities that commercial ventures encounter when navigating the emerging space exploration arena, especially when applying and developing nuclear technologies. The panelists’ discussion will focus on the technological aspect, as well as the business components of designing, testing and applying nuclear technologies for space. In addition, the panel will discuss the latest initiatives in nuclear technologies from US Governmental agencies, commercial entities, and international organizations. The panel will also address how new governmental initiatives could enable new capabilities and technologies for nuclear space. The topics will include flight system development, fuel production and innovation, as well as infrastructure and process improvement.