
SESSION 2: Stirling & Pulse Tube Cryocoolers - Analytical

Paper No. 2-3 Tuesday Morning 11:30 AM

Development of Miniature Stirling Cryocooler for HOT Applications

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To support needs of high-operating-temperature (HOT) applications, LE-TEHNIKA started development of suitable cryocoolers. This led to further miniaturization of its SRI (Stirling Rotary Integral) coolers. 2 new coolers were added to its lineup and are being tested at the moment – SRI483 and a bit bigger SRI483GP. Their mass is around 100g and 150g respectively (without a cold finger and electronics). They have both 12V internal motors and separate electronics and have an interface suitable for SWAP cold finger (6mm diameter). Their cooling powers are ranging from 0.5W to 1W (110K-150K, room temperature), GP version being more powerful. Together with development of these new coolers, development of suitable dewar vessels for measurements of their performance took place. As a result, several dewar vessels with thermal losses of around 150mW at 77K were manufactured in-house.