

---

## **SESSION 9: Reverse Brayton & JT Coolers**

Paper 9.3 Wednesday POSTER Session 1:15 to 2:45 PM

---

### ***New Applications of Small-Scale Mixed-Refrigerant Joule-Thomson Cryocoolers***

*Z. Rogala, A. Piotrowska, M. Chorowski, Wroclaw Univ. of Science and Tech., Wroclaw, Poland*

This paper aims to summarize over 15 years of research and development of small-scale (up to 1 kW of cooling power) mixed-refrigerant Joule-Thomson cryocoolers (MR JT) at the Wroc<sup>3</sup>aw University of Science and technology (WUST) in Poland. Gathered experience includes all stages of the technology development: from the associated basic research, through thermodynamic modelling and optimization, prototyping, testing and finally commercialization. New commercial areas of MR JT cryocoolers application are presented and discussed with special focus on cryotherapy, LNG and biogas technologies. The specific requirements and features of these systems are discussed to highlight the advantages of MR JT cryocoolers in considered applications.