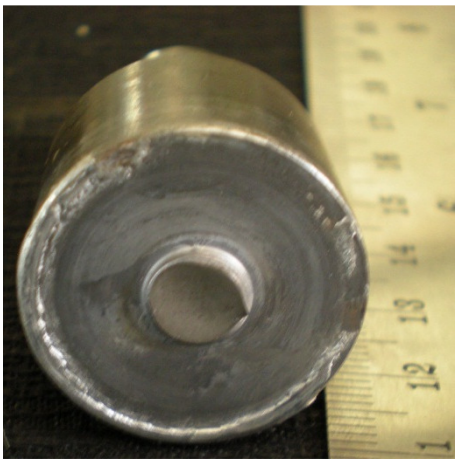
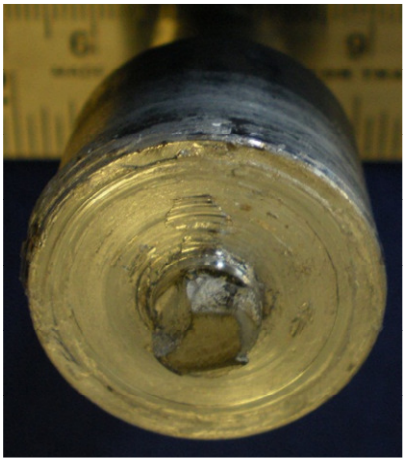
Appendix I



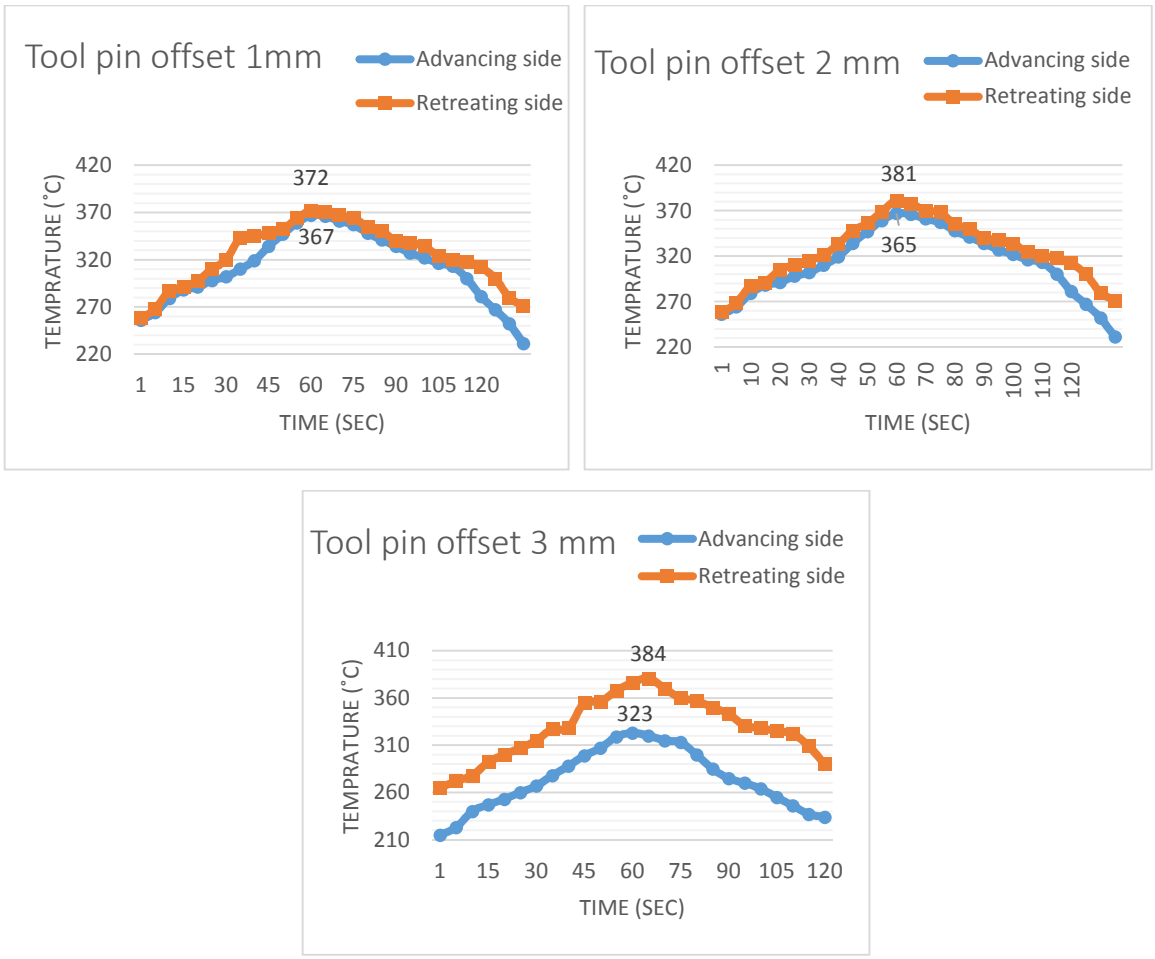
Tool pin failure at 1400 rpm



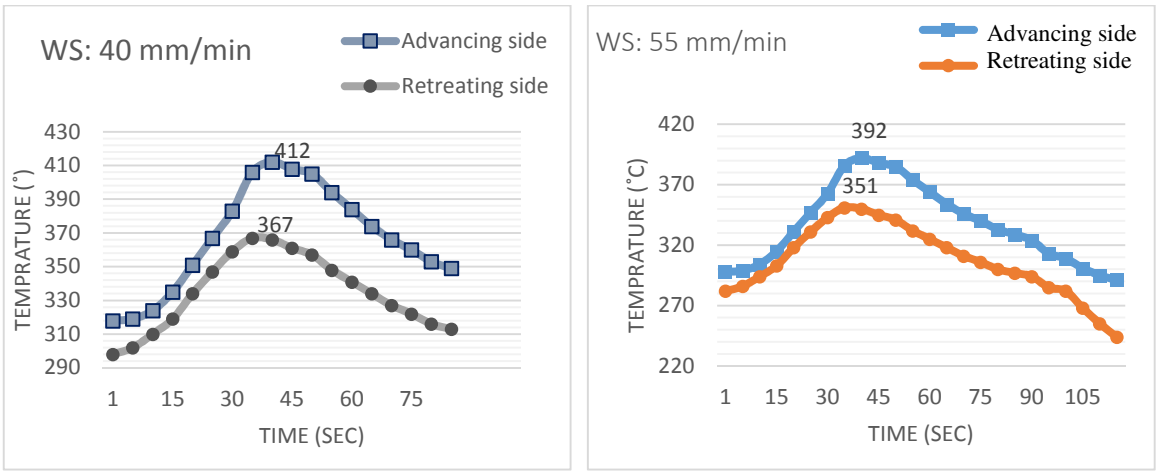
Tool failure at welding speed of 100 mm/min

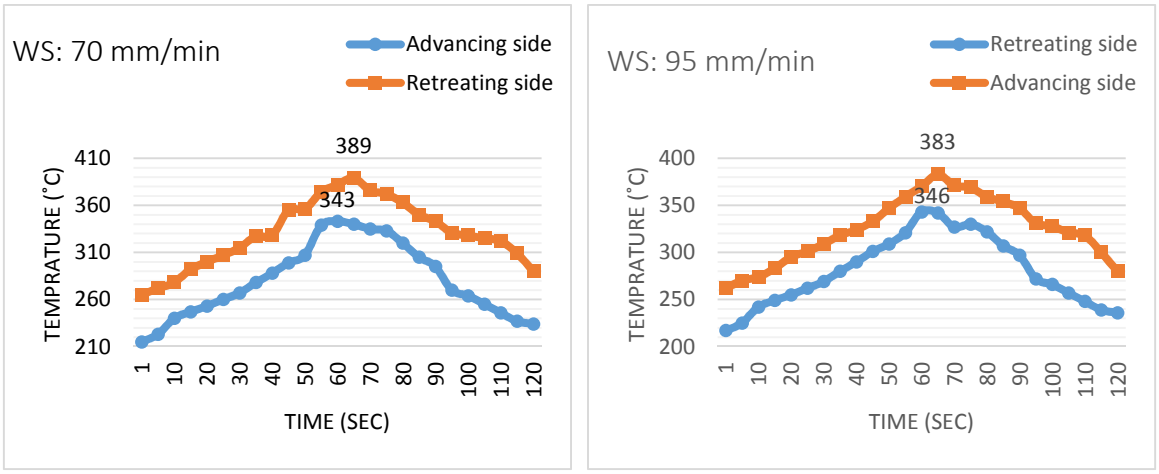
Tool struck at rotational speed of 1100 rpm and welding speed of 100 mm/min

Appendix - II

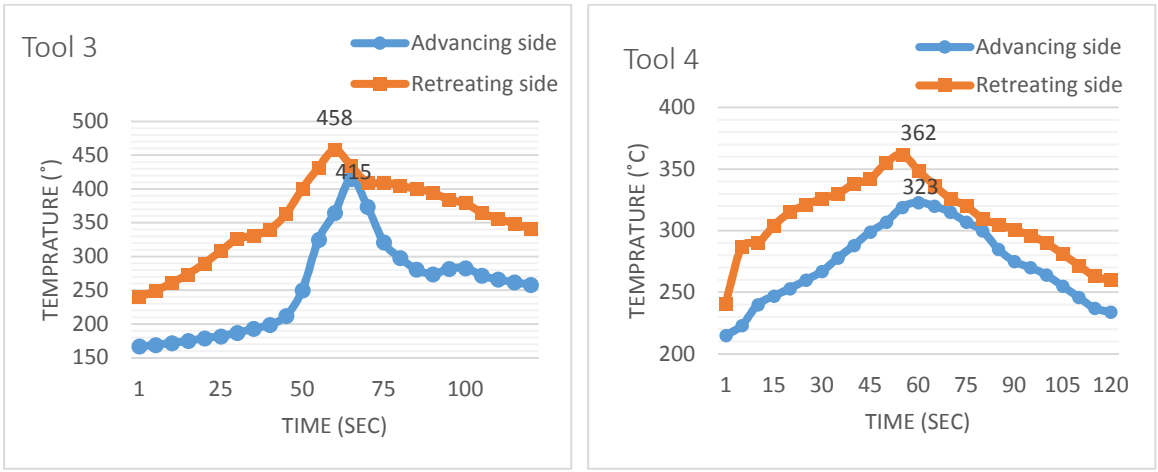


Temperature profiles for Tool 1 and different tool pin offsets

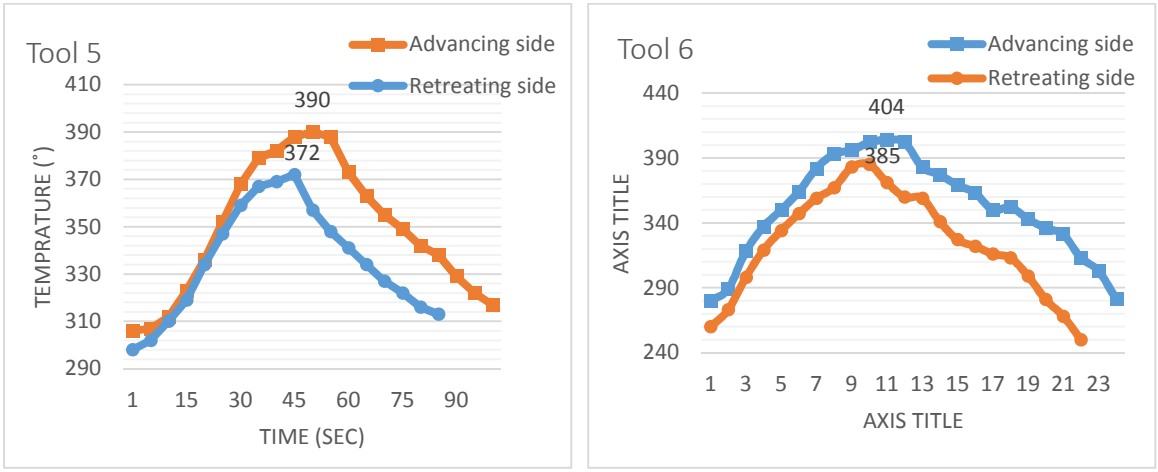


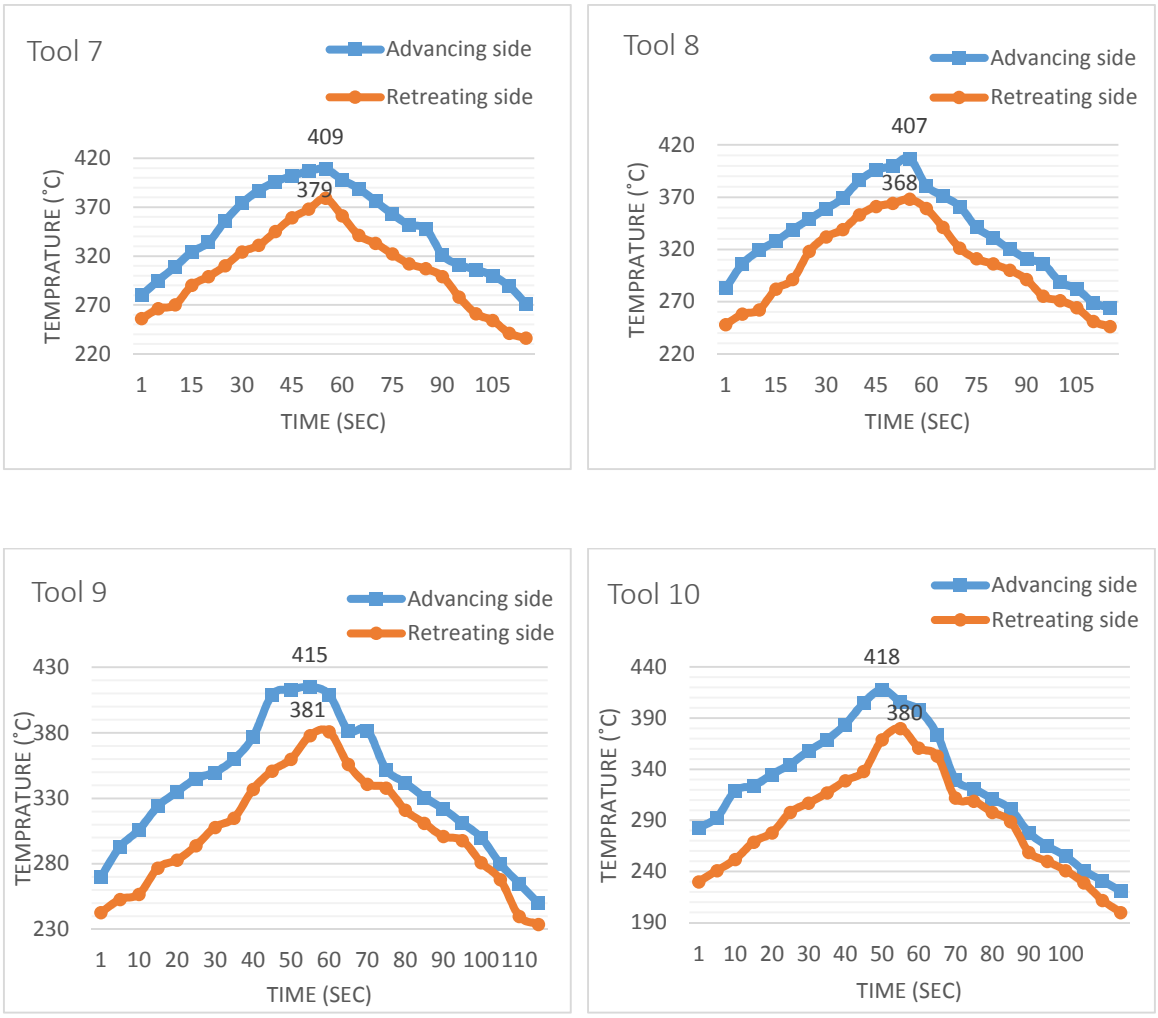


Temperature profiles for Tool 2 and different welding speeds

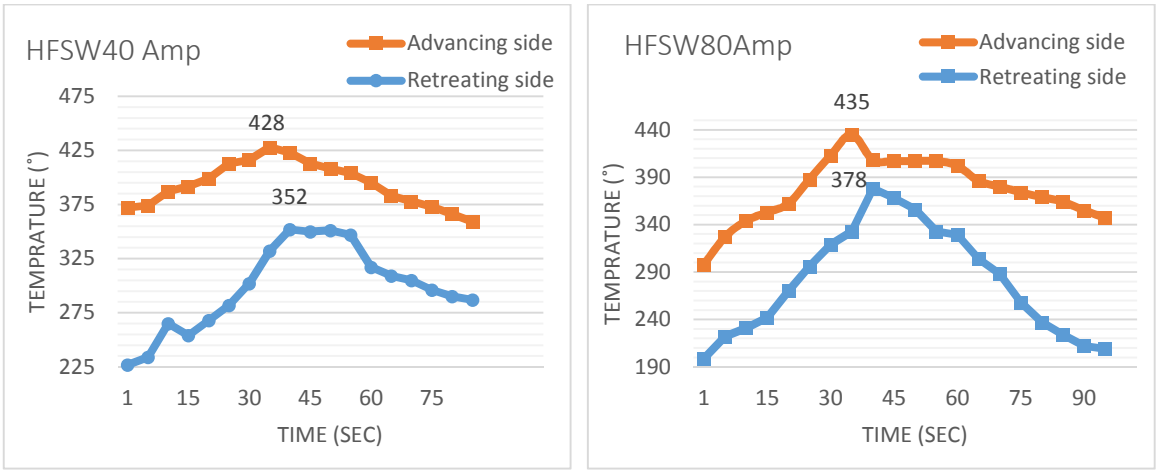


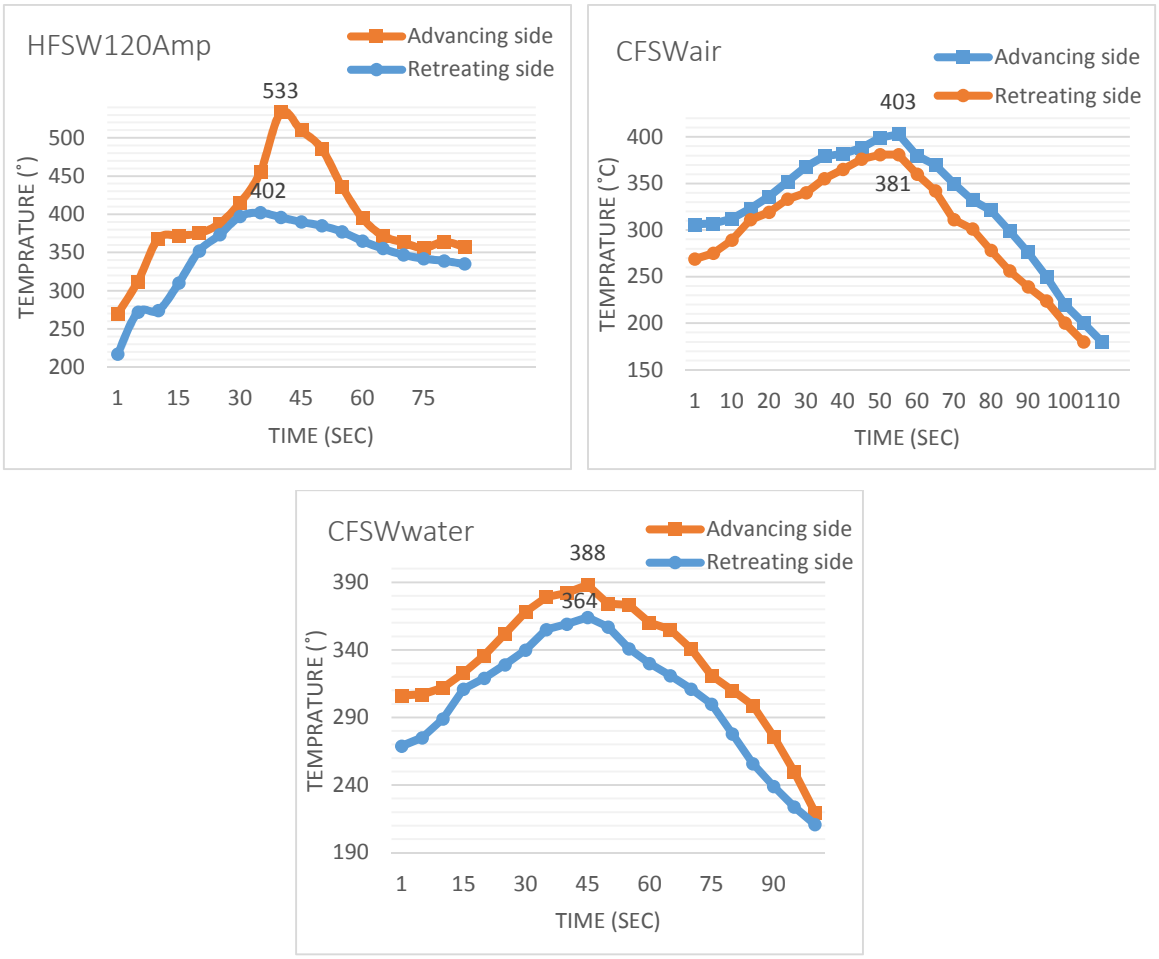
Temperature profiles for different tool pin diameter





Temperature profiles for polygonal tool pin profiles





Temperature profiles for different hybrid approaches of heating and cooling

Appendix – III List of publications

International journal publications

1. Mehta KP, Badheka VJ (2015) Influence of tool design and process parameters on dissimilar friction stir welding of copper to AA6061-T651 joints. **International Journal of Advance Manufacturing Technology** 80: 2073-2082. doi: 10.1007/s00170-015-7176-1
2. Mehta KP, Badheka VJ (2016) Effects of tilt angle on the properties of dissimilar friction stir welding copper to aluminum. **Materials and Manufacturing Processes** 31: 255- 263. doi: 10.1080/10426914.2014.994754
3. Mehta KP, Badheka VJ (2016) A Review on Dissimilar Friction Stir Welding of Copper to Aluminum: Process, Properties, and Variants. **Materials and Manufacturing Processes** 31: 233-254. doi: 10.1080/10426914.2015.1025971 [This article is in the list of top 10 most downloaded papers of journal. Also, the article is selected as Editor's choice for free access considering its great impact].
4. Mehta KP, Badheka VJ (2016) Hybrid approaches of assisted heating and cooling for friction stir welding of copper to aluminum joints. **Journal of Materials Processing Technology** 239: 336-345. doi: 10.1016/j.jmatprotec.2016.08.037
5. Mehta KP, Badheka VJ (2016) Influence of tool pin design on the properties of dissimilar copper to aluminum friction stir welding. **Transactions of Nonferrous Metals Society of China** *(Accepted for publication).*

International Conferences

1. Mehta KP, Badheka VJ. Investigations on friction stir welding defects for dissimilar copper to aluminum materials under different process parameters. International Conference on Friction Based Processes (ICFP-2014), IISC-Bangalore, India, 03-05 sept. 2014.
2. Mehta KP, Badheka VJ. Effects of tool pin design on formation of defects in dissimilar friction stir welding. 3rd International Conference on Innovations in Automation and Mechatronics Engineering (ICIAME) 2016, VV Nagar, India, 05-06 February, 2016. [Also published in **Procedia Technology 23, 513-518, 2016**. doi:10.1016/j.protcy.2016.03.057]
3. Mehta KP, Badheka V. Experimental investigation of process parameters on defects generation in copper to AA6061-T651 friction stir welding. International Conference on Research Innovations in Science and Engineering (RISE'2016), Mauritius, East Africa 20-

21 March 2016. [Also published in **International Journal of Advances in Mechanical & Automobile Engineering (IJAMAE)** 3, 55-58, 2016. doi: 10.15242/IJAMAE.E0316007]

National Conference

1. Mehta KP, Badheka VJ. Experimental studies on dissimilar friction stir welding of copper to aluminum. Advances in Welding Technology and Automation, Young Professional Seminar-Indian Institute of Welding, Ahmedabad, India, 01 October 2016.