MBE, 17(6): 7274–7301.  
DOI: 10.3934/mbe.2020373  
Received: 21 July 2020   
Accepted: 26 September 2020  
Published: 23 October 2020

http://www.aimspress.com/journal/MBE

***Research article***

**Feature extraction and process planning of integrated hybrid additive-subtractive system for remanufacturing**

**Yufan Zheng and Rafiq Ahmad\***

Laboratory of Intelligent Manufacturing, Design and Automation (LIMDA), Department of Mechanical Engineering, University of Alberta, Canada

**\* Correspondence:** Email: rafiq.ahmad@ualberta.ca.

**Appendix**

Level set functions for the final part:

;

;

;

;

;

;

;

;

.

Level set functions for the used part:

;

;

;

.

©2020 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0)