**Editor’s Comment:**

I accept the manuscript for publication in the BP International.

Considering the reviewers comments and authors response, we can publish this manuscript. The

reasons are as follows:

1- One reviewer gives comments such as “This manuscript addresses the critical issue of

dendrite fragmentation in single-crystal superalloys, which is significant for aerospace and

power generation industries. By introducing the timing effect of dendrite pinch-off in a flow-

driven fragmentation model, it provides a more accurate prediction of freckles and

segregation channels during directional solidification. The study is valuable for the scientific

community as it bridges the gap between theoretical modelling and practical control, offering

a refined approach that aligns simulation results more closely with experimental observations.

I appreciate this manuscript for its clear methodology, relevance to industrial applications,

and potential to improve defect prediction in high-temperature materials

2- One reviewer gives comments such as “This study provides valuable contributions to

understanding dendrite fragmentation during directional solidification, particularly by

introducing a novel consideration of pinch-off timing. With some refinements in clarity,

methodology description, and practical implications, this work has strong potential for

advancing both theoretical models and industrial casting processes for superalloys.”.

3- Two reviewers give comment such as “Accept after minor revision”.

According to the comments and the authors response and clarification. The manuscript has

enough value for publication in the BP International.

**Editor’s Details:**

Prof. Magdy Rabie Soliman Sanad

Professor,

National Research Institute of Astronomy and Geophysics, Egypt.