Title: HotCluster: A thermal-aware defect recovery method for Through-Silicon-Vias Towards Reliable 3-D ICs systems
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October 15, 2020

Dear Editors

Please find attached our manuscript titled "HotCluster: A thermal-aware defect recovery method for Through-Silicon-Vias Towards Reliable 3-D ICs systems", which we would like to submit for publication as an original research article in IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems. This work has not been submitted elsewhere.

This work is based on our preliminary work in [21] with the additional new contributions as follows:

- Similar: The architecture of TSV group as it is clustered into 4 subset around the router. The mapping approach is center priority (we called it CPWI).

- New: Architecture with redundant clusters of TSV. Work in [21] has no redundancy.

- New: A new online algorithm for mapping named SAWI which is based on number of spare for each router.

- New: A new offline algorithm for mapping based on max-flow min-cut theorem and solved with Ford-Fulkerson method.

- New: A thermal model for predicting fault rates that are accelerated by the operating temperature. The model is based on Arrherius's Law.

- New: A new algorithm for inserting redundant clusters and correcting instead of uniformly insertion like using SAWI, CPWI or Ford-Fulkerson approach.

We believe the difference between this work the our preliminary work in [21] are substantial enough for publication. The evaluation results also show this work outperforms the previous work in [21].

The overlapping part with [21] is the section III.A where we present the preliminary work. Other parts are new. As we listed above, the new contribution is up to 5/6 ideas (83%); therefore, we strongly believe the new paper is good new for publication and is not a self-plagiarism of [21]. If you still hesitate about the overlapping, we attached in the submission the paper [21] for your information.

Reference: [21] Khanh N. Dang, Akram Ben Ahmed, Yuichi Okuyama, and Abderazek Ben Abdallah, "Scalable design methodology and online algorithm for TSV-cluster defects recovery in highly reliable 3D-NoC systems," IEEE Transactions on Emerging Topics in Computing, vol. 8, no. 3, pp. 577–590, 2020.

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Thank you for considering our manuscript.

Respectfully yours,

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On behalf of all authors.