

## **Shuffle exchange network in multistage interconnection network: a review and challenges**

### **ABSTRACT**

Multistage Interconnection Networks (MINs) are design to provide an effective communication in switching. MINs networks consist of stages that can route the switching through the path. In this types of network the major problem occur when the switch failed to route in the stage. If these situations occur the switching need to be route to an alternative path to avoid from system failure. Shuffle-exchange networks have been widely considered as practical interconnection systems due to their size of it switching elements and uncomplicated configuration. It can helps in fault tolerance and reduce the latency. As an illustration, there are mainly six types of SEN which are important to MINs, namely SEN with additional stages, Improved Irregular Augmented Shuffle Multistage Interconnection Network (IIASN), Irregular Modified Alpha Network (ALN), Irregular Augmented Shuffle Network (IASN), Irregular Augmented Shuffle Exchange Network (IASEN) and Generalized Shuffle Exchange Network (GSEN) were reviewed and described their challenges in this paper.

**Keyword:** Multistage inter connection network; Shuffle exchange network; Additional stages; Fault tolerance; Switching element