CUSTOM DESIGN 10T SRAM USING  
SKYWATER 130NM TECHNOLOGY

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Abstract:

The development of integrated circuits (ICs) has historically had a high cost of  
entry due to the cost of licensing industry standard Electronic Design Automation (EDA)  
tools and the Intellectual Property (IP) of semiconductor manufacturers, essential to IC  
design. With the release of Skywater Technologies open source 130nm PDK, a robust and  
functional EDA IC design flow using open-source tools can be developed, allowing for a  
zero cost of entry into IC design. With the designed and implementation of 10T Static  
Random Access Memory (SRAM) will have better efficiency and potentially easy migration  
to smaller nodes (for example, nodes down to 2nm). It is also voltage scalable and will have  
high bandwidth per unit area multi-port memory system as standard and helps to improve  
competitiveness in silicon design and implementation. Using the open-source EDA flow  
developed here, a 10T SRAM is designed, implemented, and assembled.