

Seminar Title	: A Multiple Node Upset Immune 14T Radiation-Hardened SRAM Cell for Space Applications.
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Venue	: EC303, Seminar Room
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Abstract	: With the advancement in semiconductor technology, the transistor size in SRAM cells has reduced considerably leading to a reduction in critical charge and Static Noise Margin. Increased exposure to cosmic rays and other environmental radiation sources can contribute to higher incidence of soft errors. In order to provide immunity to SRAM cells in space environment, a 14T radiation tolerant SRAM cell (RTSC-14T) has been presented in this paper that is resilient to both SEU and MNU. The simulations are done using Cadence Virtuoso in 65nm CMOS technology at 27°C. The Proposed RTSC-14T single cell SRAM exhibits 1.13x shorter TRA than EDP12T and 1.06x lower write ability (TWA) than RHD-12T respectively @VDD = 1V. Also, the proposed cell consumes 1.127x/ 1.13x 1.128x/ 1.084x/ 1.139x lower static power than WE-QUATRO/ QUCCE12T/ RHD-12T/ RHPD-14T/ RHWC-12T and also consumes 1.043x/ 1.041x/ 1.013x/ 1.002x/ 1.042x lower dynamic power than QUCCE12T/ RHD-12T/ EDP12T/ RHPD-14T/ RHWC-12T respectively. However, these gains come at the expense of a larger write ability and area.