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| **Title:** | A study on the performance evaluation of a CNT-OPAMP by variation of SWNTs in the CNFET-channel region | | |
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| **Abstract:** |  |
| In this paper, a CNT-OPAMP has been designed using an eight-transistor OPAMP benchmark model and the performance of the OPAMP has been examined with the variation of the number of SWNTs used in the channel region of the CNTFETs. A simulation based assessment of the effect of increased nanotubes in the channel region is done, showing a gradual improvement in all the characteristic performance parameters of the CNT-OPAMP in comparison to conventional Si-based CMOS-OPAMP. A drastic improvement in bandwidth by 146% and a reduction in power consumption by 327.22% has been achieved for a five-tube CNFET based CNT-OPAMP suggesting CNT-OPAMP as a more suitable device for analog and mixed-signal operations in future nanoscale circuits. | |