Abstract
The demand for increasing speed and low power dissipation triggers numerous research efforts with the increasing demand of wireless portable communication systems in underground mines driven by batteries. Presence of highly flammable gases in underground mines prohibits the use of higher power dissipating electronic systems. Low power wireless portable communication devices can safeguard the life of miners in case of disaster. The demand for increased battery life of portable devices has forced researchers to seek out new integrated circuit techniques to reduce the power dissipation without comprise in performance of the
portable electronic system. Power consumption by the electronic system determines the battery life of the device. As a result, tremendous effort has been devoted to achieve lower power dissipation without affecting performance of portable communication devices. Therefore, reduction of power dissipation without sacrifice in performance is vital for wireless portable communication devices for improving the safety standards and productivity in underground mines. Multi threshold circuit technique can be used to design a low power high performance integrated circuit for wireless portable communication devices used in underground mines.

**Reference**

2. www.easterncoal.gov.in

**Index Terms**

Computer Science  Communications

**Key words**

Power dissipation
Portable device

Multi threshold circuit technique
Leakage current

Mean squared Error