

## LDMOS and DeMOS HV/Power device design

It's been over 40 years when the first power MOSFET was invented. However, till the recent years, performance and reliability of these devices was considered two independent phenomena and was always studied / addressed independently. In our recent works, for the first time, we have attempted to find common design knobs to tackle both the challenges.

In this direction, we have (i) unified physics of quasi-saturation in power MOSFETs, which was considered to be a fundamental bottleneck; (ii) using the unified physics we have shown different ways by which quasi-saturation can be mitigated, which improves device performance and (iii) have come-up with few design proposals, which improves the device performance as well as reliability. These recent works are expected to change the way power MOSFETs were designed and used in integrated circuits.

