**Example.**

**Highlights of the aticle**

* Thermionic emission and tunneling process are combined for analysis the reverse characterisation *I-V* of 4H-SiC SBDs.
* The experimental reverse transition voltage between the both mechanisms has been determined by using two models.
* The experimental reverse transition voltage increases with increasing temperature for high temperatures.
* The experimental reverse transition decreases with increasing doping concentration as predicted by Latreche's model.