

# **Electrochemical pore etching in Ge – An overview**

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<https://doi.org/10.1002/pssa.200674312>

## **Abstract**

While electrochemical pore etching in semiconductors has become a thriving field for research (and applications) in the past 15 years or so, little work has been done in Ge. Besides Si, Ge is the only semiconductor with a diffusion length large enough to enable the use of backside illumination, which has proved to be the decisive “trick” for the formation of excellent macropores in Si, and experiments in this vein have been conducted. However, Ge proved to behave in rather unexpected ways – the large body of pore etching knowledge obtained with Si and the III–V’s was not directly applicable to Ge. While no good pores could be produced in most previous endeavours including our own, we finally succeeded in producing deep pores in n-type but also in p-type Ge of various doping levels and crystal orientations. A host of new and not yet totally understood phenomena was discovered.