

R2Power300



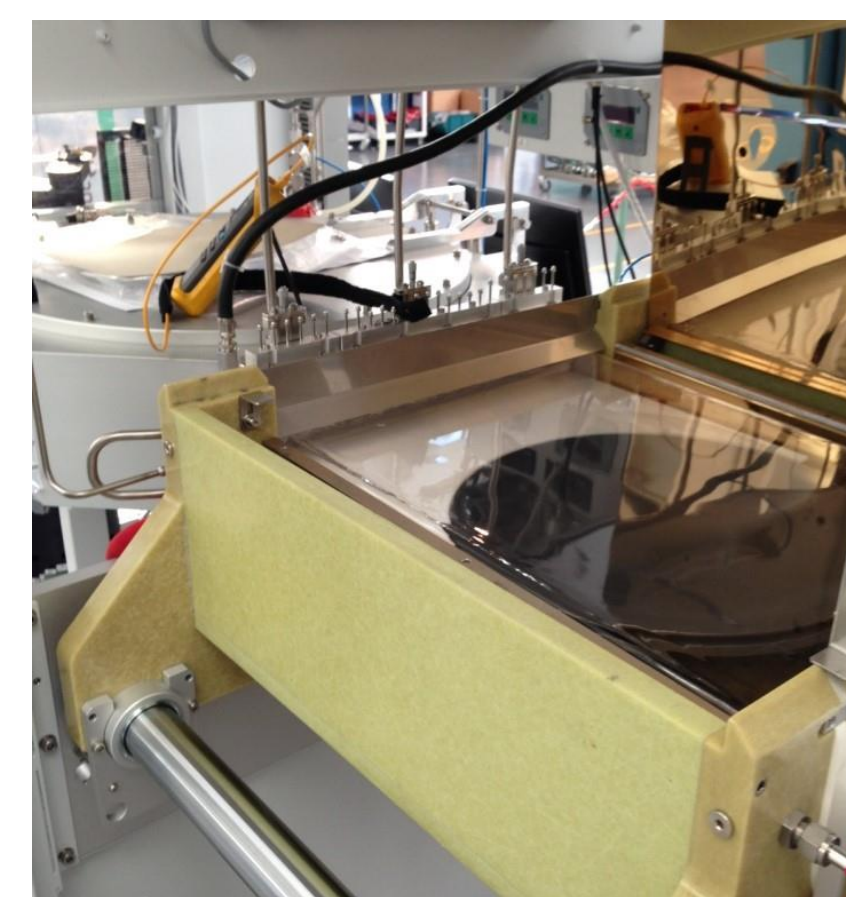
ECSEL JU

Preparing the extension to 300mm for BCD Smart Power Technology

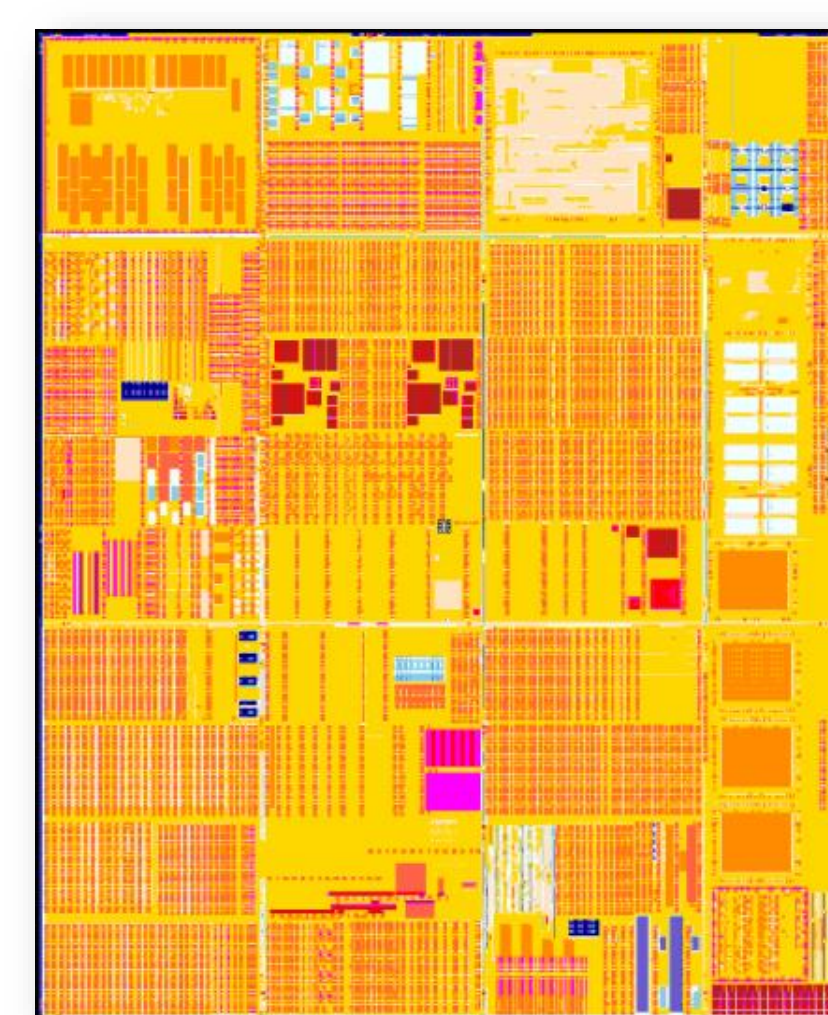
- BCD (Bipolar + CMOS + DMOS) Smart Power ICs are essential components for mid-power handling applications in sectors that are critical for the European industry: automotive, healthcare, energy management, computers and industrial peripherals.
- WSTS Market forecast for BCD-like technology (June 2016) is for a CAGR=3.0% in the period 2016-2019.
- R2POWER300 aims at improving the competitiveness of key European industrial sectors by paving the way to a new 300mm Pilot Line for Smart Power BCD Technologies of the 90nm generation in Agrate Brianza.

Results and perspectives

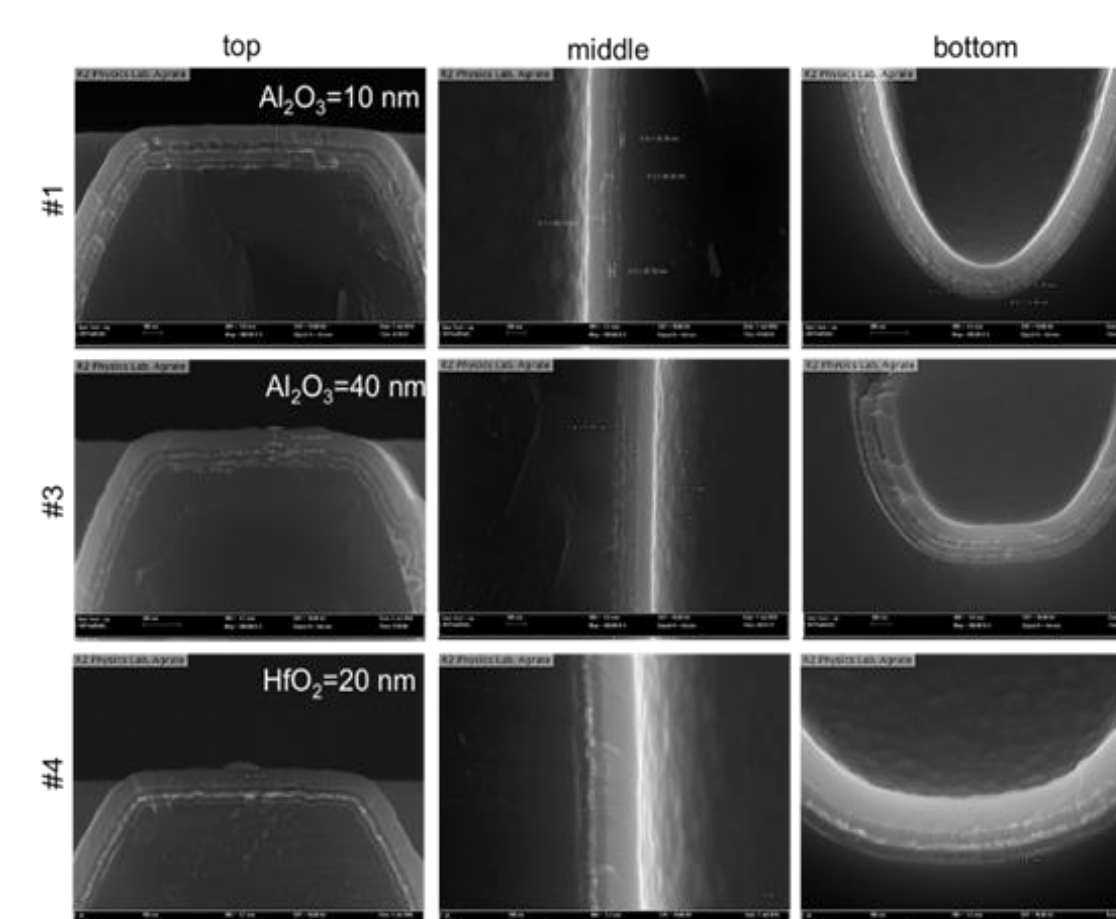
- 1st year: basic definition of 90nm technology platform, EPI reactor parameter analysis, investigation of innovative dielectric material
- 2nd year: 90nm elementary devices characterization, definition of dielectric/ metal stack for high “k” capacitors and tools preliminary evaluation
- 3rd year: first 300mm equipment capability evaluation and acceptance in Agrate fab in order to meet BCD 90nm requirements



300mm reactor chamber test



BCD10 90nm test pattern floorplan



1:125 AR dielectrics stack ALD

Partners

- STMicroelectronics
- LPE
- Politecnico di Torino
- Università di Bologna
- Università di Pisa
- ASM
- BESI
- Nanodesign
- Picosun

Countries involved

- Italy
- Nederland
- Slovakia
- Finland

Looking Ahead

R3POWERUP project, retained for funding in ECSEL Call 2016, will leverage on the preparatory work of R2POWER300, leading to a fully equipped 300mm Pilot Line for the 90nm BCD Smart Power Technology, targeting a variety of wide-impact industrial demonstrators.

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