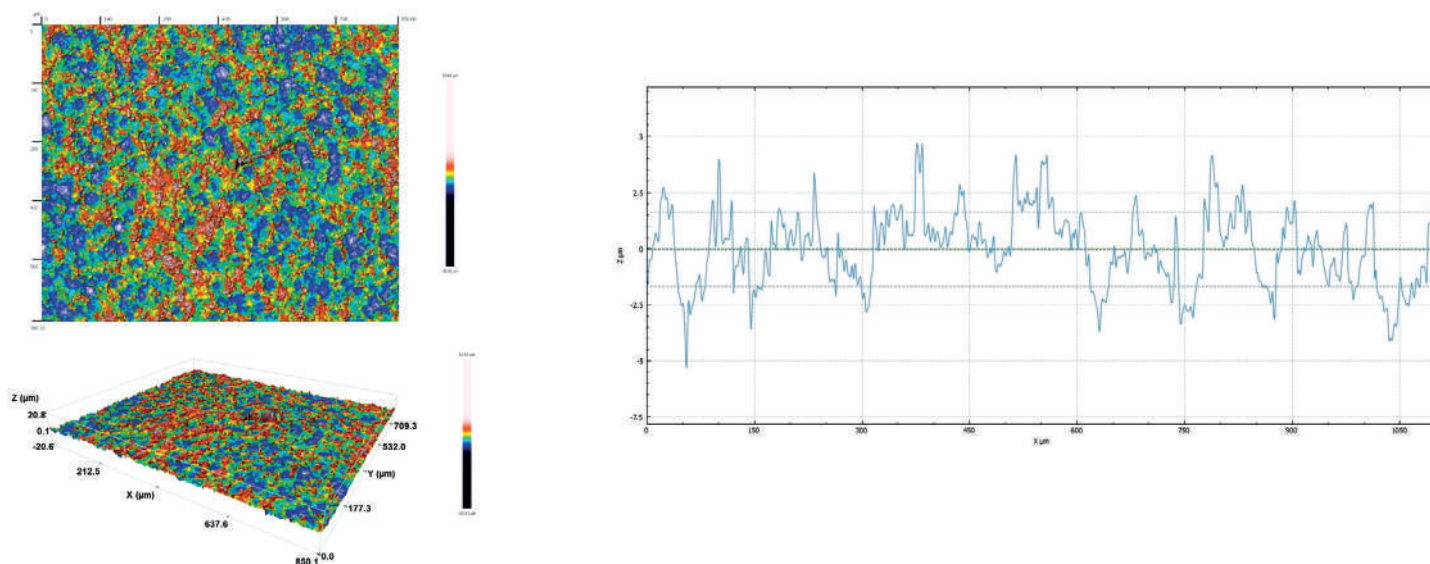


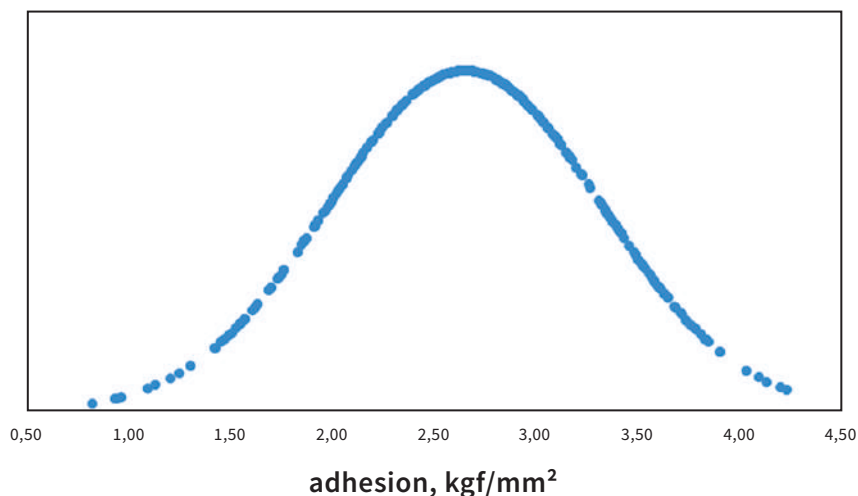
COMPONENTS FOR TE MODULES FROM RUSTEC LLC

RusTec LLC produces slices and dices fabricated from extruded materials by innovative (for thermoelectrics) cutting method which does not require attachment of ingots (slicing) or slices (dicing) to substrates by wax. It means that no need in dewaxing process which usually is carried out by alkaline solutions and what can change the quality of semiconductors surface and arise problem with adhesion of diffusion barriers. That method allows get high quality of surface with surface roughness $Ra=1.6$ microns.



Applied technologies allow to fabricate slices diameter 25 – 30 mm with thickness starting from 0.2 mm with accuracy ± 10 microns. Special technology of multilayer diffusion barriers (Ni-based alloy instead of caprice deposition of nickel) onto slices is applied. That technology provides high adhesion of barriers to material.

Normal distribution of adhesion value of coating to the material



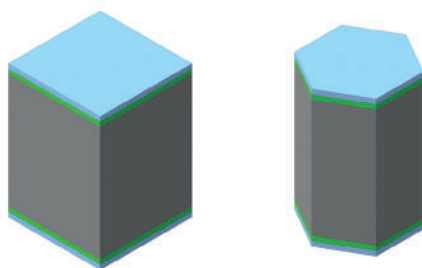
THERMOELECTRIC MATERIALS AND TECHNOLOGIES

AS TO SOLDERABLE LAYER OVER DIFFUSION BARRIERS RUSTEC PROPOSES TWO VARIANTS:

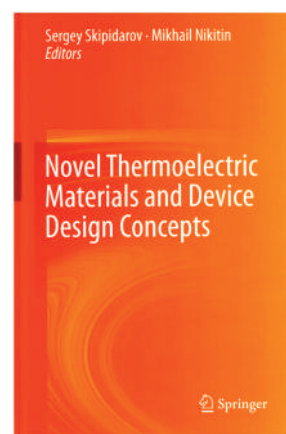
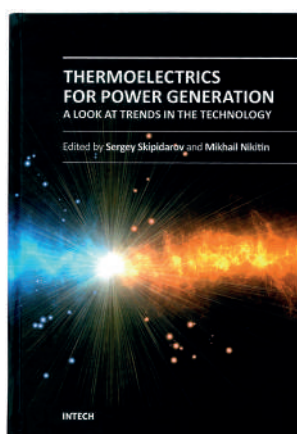
- ✓ Chemical plating by tin (7 microns $\pm$ 2 microns)
- ✓ Chemical plating by gold (< 0.2 microns)

For special module applications (high temperatures, or strong cycles) RusTec LLC is ready to recommend (patented) so-called H-technology where besides diffusion barrier made from Ni-based alloy the thick layers (about 100 microns) of aluminum are introduced.

As to dices - applied dicing method practically avoids the need in dice sorting after cutting that reduces cost. Also RusTec can fabricate not only square shape dices but also dices with hexagonal cross sections (patented) that is important for automatization of alignment process.



PHILOSOPHY OF THERMOELECTRICS



RusTec LLC is certified by ISO 9001:2015

We make your business more cool!

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