Effects of initial surface topography and contact regimes on tribological behavior of AISI-52100/AA5083 materials' pair when reciprocating sliding

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Highlights

- Lubricated and dry sliding tests were conducted on AA5083/AISI-52100 material pair.
- The effect of initial surface topography on the wear and friction behavior was discussed.
- RS approach was applied to correlate crater area, cycle number and mean absolute profile slope.
- The formation of BUL improve contact condition and provokes transition in wear mechanisms.
- Analysis of crater area contributes for controlling friction and wear when sliding dry.