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Scribe-Cleave-Passivate (SCP) Slim Edge Technology for Silicon Sensors

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We are pursuing scribe-cleave-passivate (SCP) technology of making "slim edge"sensors. Such sensors have only a minimal amount of inactive peripheral region, which benefits construction of large-area tracker and imaging systems. Key application steps of this method are surface scribing, cleaving, and passivation of the resulting sidewall. We are working on developing both the technology and physical understanding of the processed devices performance. Our recent advances include: a) further investigation of scribing technologies, b) new methods of sidewall passivation, c) investigation of automated processing machines for scribing and cleaving, d) investigation of the charge collection near the edge, e) radiation hardness of the processed devices. We will also report on the status of devices processed at the request of the RD50 collaborators.

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