Special Issue

Smart CMOS Image Sensors and Related Applications

Message from the Guest Editor

The field of CMOS image sensors is continuously growing, and so is the need for processing the data they generate. Making image sensors smart can be a must in many applications, and it is often a desired quality. This can be done in many ways, from the pixel to the periphery of the sensor. At the pixel level, event-driven pixels can be designed or in-/intra-pixel intelligence can be added, for example with a neuronal network. Data compression can also help, and in this case, low-energy solutions will be preferred. With the emergence of different types of sensors capable of providing in-depth information, 3D imaging becomes possible and the need for processing this type of data appears as well. Sensors where artificial intelligence is integrated as close as possible at the sensing place, and included in the pixel itself, are also demanded. Around this growing set of activities to develop smart sensors, there is also an overarching need for keeping power low, so that mobile applications can be addressed. Towards this goal, energy-harvesting sensors capable of generating at least part of their power needs are also demanded.

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Message from the Editor-in-Chief

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