Silicon Photonics emerged in the last decade as the almost “natural evolution” of the miniaturized optical components. At the state of the art, even if Silicon has not cancelled the use of discrete optical components and if it cannot compete with other materials for specific applications, it is nevertheless impossible to ignore the relevance of the Silicon Photonics field in the current photonics research. The first field where Silicon-Photonics established as a key technology is that related to short-distance optical communication system, but nowadays the developed technologies allow considering the use of Silicon-Photonics also for completely different applications, ranging from gas and liquid sensing to biological analyses.

The aim of this Special Issue is to put together a collection of papers covering different applications (so as to offer a broad panorama of the possible Silicon Photonics purposes) and highlighting the most recent scientific discoveries and trends in this continuously and rapidly evolving field.

Dr. Paolo Minzioni
Guest Editor