

Nanoelectronics roadmap for Europe: Identification and dissemination

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The H2020 NEREID Coordination and Support Action entitled "Nanoelectronics Roadmap for Europe: Identification and Dissemination" was launched in December of 2015 for a duration of 3 years. The objective of this project is to elaborate a new roadmap for nanoelectronics, focused on the requirements of European semiconductor and semiconductor-based applications industries, as well as on major societal challenges. This roadmap is intended to cover advanced concepts developed by various research institutes and universities in order to achieve an early identification of promising novel technologies and cover the R&D needs all along the innovation chain. The final result will be a roadmap for European micro- and nano-electronics, with a clear identification of medium- and long-term objectives.

The first draft of the roadmap was released in December of 2017 [1]. The roadmap is divided into several main technology sectors: advanced logic (including nanoscale FETs and memories) and Connectivity; functional diversification (smart sensors, smart energy, energy for autonomous systems); beyond-CMOS technologies emerging devices and computing paradigms); heterogeneous integration and system design; equipment, materials and manufacturing science. It also includes cross-functional enabling domains. Particular care is devoted to build-up a strong link between short/medium-term targets (typical of more-Moore and more-than-Moore domains) and long/very long-term (*e.g.* beyond-CMOS) activities, which is key to speeding up technology transfer from academia to industry, and from research to the marketplace.

The NEREID roadmap is being developed in joint collaboration with the new international IRDS roadmap in the fields of more-Moore, beyond-CMOS and computing systems, but it is also complementary to IRDS in the more-than-Moore domain (*e.g.* smart sensors, smart energy, and energy harvesting), where European industry has leading-edge capability.

The ambition of the NEREID roadmap is to fully represents the specificity of the European industrial and academic landscape and therefore to be considered as a reference for future research programs at European, national and industry levels.

1. Available at www.neroid-h2020.eu/content/neroid-mid-term-roadmap-download