

Panel at [SPIE Defense and Commercial Sensing \(DCS\)](#) on April 18, 2018 discussed mid-infrared technologies for both defense and commercial sensing markets.



Addressing a capacity audience, presenters from the industry and investment community, made clear for both defense and commercial sensing markets the underlying mid-infrared technologies that enable widespread adoption have rapidly matured. Panelists Francois Chenard, *IRflex*, Adam Piotrowski, *Vigo System*, Ralph Taylor-Smith, *GE Ventures*, Eric Takeuchi, *DRS Daylight Solutions*, and Mark Witinski, *Pendar Technologies* offered diverse perspectives on the status of the mid-infrared technologies as well as strategies to achieve fast progress towards increased commercial development and viability with respect to defense and commercial applications.

The panel discussed a wide range of topics, from the recent developments in the generation of mid-infrared radiation to state-of-the-art photodetectors. The advantages of mid-infrared sensing due to the presence of strongly absorbing species in this part of the electromagnetic spectrum, and the increasing commercial availability of coherent high brightness sources were discussed. From a technology development point of view, the importance of defense applications and government funding in the early stages of the development was mentioned. Several examples of technologies that had made the cross-over from defense to commercial sensing were given, and it was noted that a large portion of the companies currently of interest to the investment community have their roots in high-risk defense applications. This differentiates the mid-infrared development during the first decade of this century from the near-infrared development of the 80's and 90's, where the commercially driven telecommunications field was always a major technology accelerator.

In conclusion, it was agreed that mid-infrared applications have a bright future as the technologies continue to transition from laboratory-based development into real-world applications. The increase in the availability of high quality components in this spectral range further accelerates this process, enabling a wider range of sensing systems based on mid-infrared technologies in the near future.

With the series of [SPIE DCS workshops MIRTHE⁺](#) continues its efforts to speed up commercialization of mid-IR technologies, and to connect the industrial and investment communities with scientists and researchers and spark discussions and identify the emerging technologies and new commercial applications in the area of mid-IR photonics.

MIRTHE⁺, a Photonics Sensing Center at Princeton University with Partners advances the knowledge and technology pertaining to mid-infrared photonics sensing technologies in industrial, environmental, health, and security applications. Through the Academia-Industry Collaboration Program, member companies gain an early access to innovative technologies and to network of highly respected experts from academia and industry, which ultimately is focused on moving photonics sensing technologies towards commercialization. To learn more go to www.mirthecenter.org

