

DARPA Antimonide Based Compound Semiconductors Program

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The DARPA Antimonide based Compound Semiconductors (ABCS) program is focused on integrated electronics based on the 6.1 Angstrom family of materials. The goal of the four-year program is the demonstration of integrated circuits containing thousands of devices operating at extremely high speed with low consumed power. Two subsidiary thrusts are materials and infra red sources. Key issues with materials include the development of semi-insulating substrates for high frequency applications. The unique bandgap engineering opportunities with the 6.1 materials form the basis for novel infra red lasers operating at higher temperatures and/or longer wavelengths.

I will describe the ABCS program in the context of the advanced microelectronics programs currently being pursued within the Microsystems Technology Office at DARPA. In particular, I will emphasize how the program fits into DARPA's vision of future Microsystems along with applications where 6.1 Angstrom integrated electronics will have a major impact.