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Dustin McIntyre, a mechanical engineer at the U.S. Department of Energy's National Energy Technology Laboratory (NETL), is one of the inventors of a laser spark distribution and ignition system developed at NETL which has recently been issued a patent.

McIntyre, a resident of Morgantown, WV, received his BS degrees in electrical engineering and computer engineering and MS and PhD in mechanical engineering from West Virginia University in Morgantown, WV.

Producing a high peak power laser spark from a single low power pulse, this laser spark distribution and ignition system has application in natural gas-fueled reciprocating engines, turbine combustors, explosives, and laser-induced breakdown spectroscopy diagnostic sensors. The laser spark plug will enable natural gas-fired engines to produce lower emissions of nitrogen oxides than with conventional electrical spark plugs.

The target market for this ignition system is natural gas fueled reciprocating engines used for pumping and power generation. Potentially, it could also be used for other ignition needs, including gas turbine engines, and can be applied to the Laser Induced Breakdown Spectroscopy sensor devices.

NETL is one of the U.S. Department of Energy's national laboratories. NETL – "the ENERGY lab" – focuses on America's economic prosperity, which requires secure, reliable energy supplies at sustainable prices. Three overarching issues characterize the energy situation in the United States. They are energy affordability, supply security, and environmental quality. The Department of Energy's only government-owned, government-operated national lab, NETL is a research and technology center where these energy challenges converge and energy solutions emerge. NETL implements a broad spectrum of energy and environmental research and development programs through its own research staff and through funded research at other labs, universities, and industry that will return benefits for generations to come.

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