



# D I A L

**Diagnostic Instrumentation & Analysis Laboratory  
Starkville, MS 39759-9734**

## ***Diagnostic Field Applications, Coordination and Testing Support***

The Diagnostic Instrumentation and Analysis Laboratory (DIAL) has initiated a Diagnostic Field Applications, Coordination, and Testing Support (DFACTS) effort. The DFACTS program addresses the need for on-site measurement of various performance parameters employing DIAL's Field Applications. This aids in the rapid demonstration and implementation of modern fieldable diagnostic methods by providing on-site measurements with DIAL's diagnostic systems and by coordinating and supporting demonstration field tests of instrumentation systems from diagnostic developers within the private sector. Moreover, these on-site measurements provide direct testing support to the DOE complex. This not only provides information for evaluating the applicability of measurement techniques, but also provides a significant add-on-value to the testing efforts being carried out across the DOE complex. This testing support is a major element and advantage of the plan. One major advantage of DIAL involvement is that, because the measurements are made by an independent third party, they also carry more weight in convincing stakeholders that the particular process is effective.

This program provides support to each of DOE's focus and cross cutting areas, and directly aids in the rapid deployment of the necessary diagnostics to the users, i.e., DOE and/or private contractors. The program coordinates involvement of the commercial testing instrument sector



and provides testing support across the DOE complex. The DFACTS effort provides a mechanism for improved industrial participation by directly soliciting participation by industries developing diagnostic instruments. In this way, untapped resources from the commercial sector for new diagnostic instrumentation and/or off-the-shelf instruments are recruited and utilized. Demonstrations and testing are done in conjunction with DIAL's scheduled field tests and via special test arrangements making use of other DOE scheduled process tests. Hence, a wider array of diagnostic systems are tested and evaluated. By making use of DIAL's mobile field laboratories, rapid response is provided. With a relatively small added effort, a significant value-added benefit is obtained from the wide array of testing being carried out across the complex. As part of this effort, diagnostic development work is carried out to fill an identified DOE need in the thrust areas of DFACTS.

The Laboratory is actively engaged in developing and applying advanced optical-, laser-, and acoustic-based diagnostic techniques and instrumentation systems. These measurement systems provide nonintrusive, remote, real time measurements and are designed to operate successfully in the industrial-like environment of large-scale facilities. Such diagnostic instrumentation provides the information required to more clearly characterize and optimize the various treatment processes, as well as, the means to monitor and control the environmental impact of various technology processes. As part of the DOE waste



treatment and remediation program, DIAL/MSU is developing an array of diagnostics which can provide flexible, multi-measurement capabilities particularly useful for process monitoring.

DIAL can provide state-of-the-art measurement systems and expertise to support various development applications from laboratory-scale to large-scale test facilities. Moreover, the diagnostic methods and capabilities of DIAL can, in general, provide:

- Process/Performance Parameters
- Evaluation/Characterization of High Temperature Gas Flows
- Process Characterization
- Validation Data for Model Development
- Process Monitors/Control
- Environmental Monitoring, CEMs
- EPA Reference Methods

- Analytical Laboratory
- Diagnostic Development
- Engineering Development
- In-house Testing

If you feel that this program could be of help to you, please contact us at your earliest convenience. We will be glad to visit with you to learn more about your needs and to further describe our capabilities.

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