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Workshop on Ultrasonic Nondestructive Evaluation Methods

The World Federation of Nondestructive Evaluation Centers (WFNDEC) announces a workshop on Ultrasonic NDE Methods to be held July 8-11, 2002, at Iowa State University, Ames, Iowa. The workshop is the second in a series of workshops sponsored by the WFNDEC as a means of developing globally acceptable engineering NDE curricula. This workshop series is specifically designed for NDE professionals and educators worldwide who wish to help develop new educational opportunities in the NDE field for students at the undergraduate/graduate level. If you are involved in the education of students at the Bachelor of Science level and above and want assistance in developing and delivering coursework on modern ultrasonic NDE methods, this workshop is for you. Similar workshops on other NDE methods and topics will be offered in the future.

Background of WFNDEC

In response to a growing trend of industrial globalization and the resulting challenges associated with the world-wide maintenance of quality, safety and reliability, the WFNDEC was founded at an international meeting in Snowbird, Utah, in July 1998. Founding members included leading NDE research centers in Argentina, Belarus, Brazil, China, India, Korea, Russia, South Africa, Ukraine and the United States, with the office of the permanent secretariat at Iowa State University (details of the organization can be found at <http://www.wfndec.org>).

WFNDEC members are committed to pursuing cooperative NDE research and to developing a unified, world-wide curricula for NDE education focused on new engineering approaches for NDE.

A unified curriculum will allow students in conventional engineering disciplines to take special courses in NDE and other related subjects that will prepare them to work in industry or to pursue more advanced studies. The learning objectives of the unified curriculum, established at a recent meeting of the Federation, emphasize familiarity with new model-based analysis techniques for quantitatively assessing the use of NDE techniques for product design, manufacturing and condition monitoring. The approach also couples NDE engineering with the emerging practice of unified life cycle engineering.

The workshop is designed to “teach the teacher”. Thus, the workshop will provide methods and resources that will allow the participant to effectively develop/present elements of an NDE curriculum in his or her own home organization. The workshop is open to engineering faculty members intending to teach broadly in the NDE field

and to those practicing NDE professionals who have responsibility for educating personnel in NDE techniques. The workshop will also be of interest to those engineers not familiar with ultrasonic NDE who wish to have an intensive review of the state-of-the-art in this important discipline.

Workshop Outline

The four-day workshop will cover the engineering fundamentals that form the basis of the latest ultrasonic modeling and experimental techniques. The workshop will involve discussions of test equipment and their characterization, how ultrasonic sound beams propagate and scatter from flaws, and the development of measurement models that describe quantitatively entire ultrasonic systems. Advanced topics such as the effects of material and geometry variability, model-based flaw sizing, and the determination of ultrasonic probability of detection (POD) will also be included. The workshop will be an interactive mix of lectures, laboratories and computer-based simulations.

Workshop Materials

Participants will receive a copy of all course materials and handouts on the first day of the workshop. Participants will also receive a copy of the book "Fundamentals of Ultrasonic Nondestructive Evaluation – A Modeling Approach" by Professor Lester W. Schmerr Jr.

Faculty

The workshop will be designed and taught by members of the WFNDEC in cooperation with faculty/staff at the Center for NDE, Iowa State University. The workshop director is Professor Lester Schmerr, Professor of Aerospace Engineering and Engineering Mechanics at Iowa State University, and the author of the text, "Fundamentals of Ultrasonic Nondestructive Evaluation – A Modeling Approach".

Qualifications for Attendance

Participants should have an advanced degree in engineering or in the physical sciences and be conversant with basic physics and vector calculus. Participants should also be computer-literate as part of the course will involve the use of computer-based simulation models.

Admission

Admission will be limited to a total of 24 participants. Of these, 12 openings will be reserved for nominees of the members of the Federation. The rest are open to other qualifying participants. The Federation reserves the right to reject applications that fail to meet the qualifications and admission criteria.

Application Form

The application form for the course can be found at http://www.wfndec.org/summer_school. The due date is March 16, 2002.

Accommodations

Low cost dormitory-type housing arrangements will be made available to accommodate participants. Participants can also make arrangements to stay at a number of nearby hotels. Details will be made available to all applicants prior to the workshop.

Fees

The workshop fee is \$2,000. This fee covers all course materials, coffees and lunches during the workshop and a banquet.

For further information, contact *Lester Schmerr*.

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