# Special Program in Applied Mathematics and Applied Mechanics

*Miniaturized Bioanalytical Devices*

Prof. Chien-Fu Chen

2016 - 04 - 12 (Tue.)
15:00 - 18:00
103, Mathematics Research Center Building (ori. New Math. Bldg.)

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Diagnostics is critical for prevention, identification, and disease treatment. Current laboratory analytical techniques provide proper diagnoses in more than 70% of all applications and can be used to aid the continuous monitoring of drug therapy. However, classic diagnostic technologies are not well suited to currently expanding testing requirements, especially those in the field, because they rely on complicated sample purification and sophisticated instruments that are labor intensive, time-consuming, expensive, and require well-trained operators. One of the main challenges for industry is to develop fast, accurate, easy-to-use, and inexpensive diagnostic devices so that development costs can be brought down and so that more patients might benefit at both diagnosis and treatment stages. In our research group, we focus on the development of miniaturized systems using micro/nanomaterials for biomedical point-of-care sensing applications, that are affordable, sensitive, specific, user-friendly, rapid, robust, and are operable without additional complicated equipment.