

# “Scientific Research Nurtures Teaching” Based on Coaxial Electrospaying (HE7125)

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## 1) INTRODUCTION

After a well grasp of the fundamental professional knowledge, the students (often the PhD or Master postgraduate students but also some undergraduate students) will also need to read some scientific papers to follow the cutting-edge knowledge of their speciality. Later, they can begin their innovative investigations on new topics or even new projects under the guidance of their supervisors.

On the basis of theoretical learning about professional knowledge and also the experimental exploration of professional practices. The students will be able to write their research articles for publication in the international journals. After enough learning accumulations, the students and also their supervisors may write reviews about a certain professional topic. In a special professional field, the new speciality teaching materials can be published after more and more topics are reviewed and gradual systematization.

## 2) THE KEY ROLE OF PROFESSIONAL EDUCATION AND THE FORMATION OF STUDENTS PRACTICAL ABILITY REQUIRE “SCIENTIFIC RESEARCH NURTURES TEACHING”

“Advanced methods for materials characterization” is an important professional basic course for all students majoring materials disciplines. This course focuses on the working principle of common modern analytical and testing instruments and their application in material characterization and analysis.



Figure 1 To Implement safe education on graduate and undergraduate students through a systematic combination of classroom lessons, experiments, and final examination.

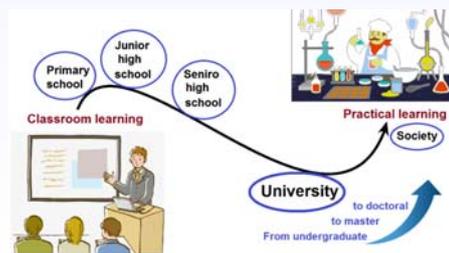


Figure 2 The analysis methods taught in the classroom and their key elements in safety education.

## 3) THE ABUNDANT PROFESSIONAL RESEARCH TOPICS CAN ENSURE A FRUITFUL “SCIENTIFIC RESEARCH NURTURES TEACHING”

## 4) EFFECTIVE IMPLEMENTATIONS OF “SCIENTIFIC RESEARCH NURTURES TEACHING” UNDER THE DIRECTIONS OF “THREE-ALL” EDUCATION SPIRITS

This not only save the time and fee for conducting these samples from different persons, but also an opportunity for them to study from each other about how to prepare the samples subjected to the SEM and TEM observations.

The most useful materials that can be explored to nurse professional teaching should be the treatments of different kinds of working fluids for creating novel nanostructures



Figure 3 Some characterization experiments that are arranged in the first floor of the building of Materials Science and Engineering.

## 5) Conclusions

“Scientific Research Nurtures Teaching” in universities is the request of the metabolism of professional knowledge renewing, the key role of professional education and the formation of students practical ability, and the abundant professional research topics as fruitful teaching materials. Under the spirits of “three-all education” by Ministry of Education in China, “Scientific Research Nurtures Teaching” can be effectively carried out based on examples of the scientific researches about coaxial electrospaying.



Figure 4 & 5 Some characterization experiments and the preparation of nanofibers that are arranged in the third floor of the building of Materials Science and Engineering.