深圳北理莫斯科大学
УНИВЕРСИТЕТ МГУ-ППИ В ШЭНЬЧЖЭНЕ
SHENZHEN MSU-BIT UNIVERSITY

应用数学讲座

Научный Семинар по Прикладной Математике

Research Seminar on Applied Mathematics

Руководитель: Доцент Чжан Е
主持人:张晔(副教授, 深圳北理莫斯科大学)

（材料科学）报告（二）

报告人 / Докладчик / Speaker:
Associate Prof. Dr. habil. Xunlin Qiu, Institute for Print and Media Technology at Chemnitz University of Technology, Germany.

题目 / Название / Title:
“Multi-phase piezoelectric polymer films and their applications in advanced transducers”

时间 / Время / Time:
2019 年 11 月 7 日, 下午 6 点半至 8 点 / 7 Nov. 2019, 18:30-20:00 p.m.

地点 / Место / Venue: 1 教 113/ Building 1, Room 113

摘要 / Аннотация / Abstract:
The demand for advanced functional materials in transducer technology is growing rapidly. Piezoelectric materials transform mechanical variables (displacement or force) into electrical signals (charge or voltage) and vice versa. They are suitable for a large range of existing or conceivable applications in e.g. non-destructive testing, medical imaging, ultrasonic sensors for ocean exploration. A charge-spring model for multi-phase piezoelectric materials is introduced, which sheds light on the requirements for a desired piezoelectric material. Taking non-polar cellular polymer ferroelectrets and polar P(VDF-TrFE) ferroelectric polymer as examples, the techniques for preparing piezoelectric polymer films, the mechanisms of charging/poling and of the resulting piezoelectricity are presented. In addition, some examples of relevant applications are demonstrated.

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