

## 【无机化学论坛】新颖无机固体材料的结构设计和性能提升

报告人: **陈玲 教授**

北京师范大学化学学院

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地点: 北京大学化学学院 A 区 717 报告厅.

### 陈玲简介



**陈玲教授:** 北京师范大学二级教授。博士生导师。1993 年西南大学化学系学士毕业, 1996 年北师大化学系硕士毕业, 1999 年中科院福建物构所博士毕业。2000-2003 年美国衣阿华州立大学美国能源部 Ames 实验室博士后。

2003 年入选“中科院百人计划”择优支持。2003-2014 中科院福建物构所研究员, 课题组长。2014 年至今北京师范大学化学学院工作。获“国家杰出青年科学基金”(2012), 国家万人计划(2013), 卢嘉锡优秀导师等荣誉。

现任美国化学会《晶体生长与设计》副主编(2000-); 《德国应用化学》国际编委(2021-)

长期从事新颖无机固体功能材料的设计合成研究、构效关系和性能提升研究。近五年主持国家重大项目《新型无机倍频晶体材料的化学创制》等基金。在 *J. Am. Chem. Soc.*、*Angew. Chem. Int. Ed.*、*Nat. Commun.* 等国际学术刊物上发表论文 130 余篇。

**报告题目: 新颖无机固体材料的结构设计和性能提升**

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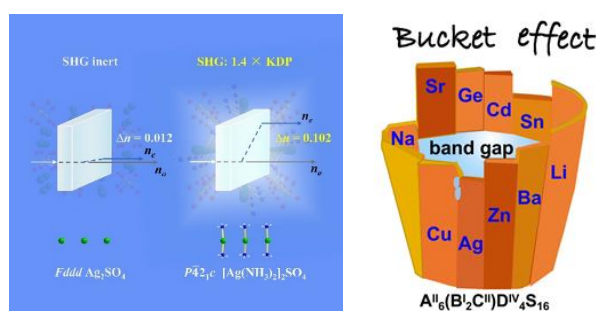
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本文介绍了我们在无机固体功能材料的结构设计和构效关系研究方面的最新进展, 揭示了一些结构与宏观物性之间的内在机制。具体例子包含首例磷酸盐、单氟磷酸盐深紫外非线性光学晶体化合物、提出“ $\pi$  共轭限域”新理论、“阳离子配位策略”、能隙调控“木桶短板原则”等。还发现 Zintl 相化合物纯声子散射与弱电声耦合、刚性反  $\text{CaF}_2$  型亚晶格与软  $\text{NaCl}$  型亚晶格形成的非谐性多级复杂结构  $\text{CsCuSe}_3$ 、 $[\text{Bi}_2]_m[\text{Bi}_2\text{Se}_3]_n$  家族中层间超范德华作用提升载

流子迁移率、以及压力诱导的类液态  $\text{Ag}_9\text{GaSe}_6$  热电化合物不稳定性及其消除方法等。

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**Fig. 1** (left): The birefringence enhancement is attributed to the unique  $[\text{Ag}(\text{NH}_3)_2]^+$  cation moiety. (right): The structural complexity makes the band-gap-tuning a multiple-factor-determined case, in which a “bucket effect” is uncovered.

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