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## 主要研究方向

主要从事陶瓷相变与韧化、航天防热复合材料及其工程应用等方面的科研与教学工作，主持及主要参与完成和在研“国家自然科学基金”、“国家高新工程”、“863”、“总装备部”、“国防科工委”和航天横向协作等各类科研课题 30 项。研究方向主要包括：

- | 陶瓷材料相变与韧化机理
- | 特种条件下陶瓷材料的损伤机理
- | 陶瓷基复合材料的制备、评价与表征
- | 多功能陶瓷复合材料
- | 生物复合材料及涂层
- | 纳米陶瓷及其复合材料

## 社会兼职

- | 中国机械工程学会理事
- | 中国机械工程学会材料分会理事长
- | 中国硅酸盐学会特陶分会副理事长
- | 中国材料研究学会常务理事
- | 国家自然科学基金委工程与材料学部专家咨询委员会委员
- | 《硅酸盐学报》、《JMST》、《材料科学与工程》等刊物编委。

## 主要学术成果

研制出多种具有自主知识产权的航天防热陶瓷基复合材料，并采用该系列陶瓷复合材料研制出杀手铜型号关键配套部件—弹头端帽与连接锥，以及某重点工程裙部测高天线窗盖板；另有其他型号天线窗盖板、火箭发动机喉衬及外隔热套环、导弹天线罩等防热部件型号配套关键产品和样件等，也成功通过地面台架试验并被选为备用方案。为推动陶瓷材料在航天防热部件上应用和我国杀手铜武器研制做出了突出贡献。获国家技术发明二等奖 1 项，省部级科技一等奖 3 项、二等奖 5 项；申报国家发明专利 44 项（已授权 6 项）；发表主要学术论文 300 余篇，SCI 收录 286 篇、SCI 他引 633 次、H 因子 15，EI 收录 260 余篇；出版专著及教材 5 部，获全国优秀教材一等奖 1 项；发表的论著共被国内外同行他引 2200 余次；培养博士 34 人、硕士 30 多人。1996 年被评选为国家有突出贡献的中青年专家，1997 年获国家杰出青年基金资助，1998 年获航天总公司“航天奖”，同年获第四届“中国青年科学家奖”。

| 主要论著：

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I 主要学术论文:

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#### I 授权发明专利

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