

## 研究队伍

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## 简历:

**耿安松研究员**, 1958年12月生, 汉族, 原籍江苏泗洪, 中共党员, 博士, 研究员, 国际欧亚科学院院士。从事有机地球化学研究30年, 侧重于石油天然气资源评价方法与指标的研究, 先后负责和参加完成国家攻关、国家973项目、国家自然科学基金、中国科学院重大等40余项科研任务。研究成果涉及煤成气成因综合判识、石油运移、特殊类型有机质成烃、固体沥青地球化学及沥青质地球化学、天然气排烃运移、有机质生烃动力学、深层高过成熟烃源岩生烃评价技术、油砂沥青热碱水分离等多个方向, 早期的工作还包括黄土地球化学和第四纪古气候变化。兼任中国石油学会理事、广东省矿物岩石地球化学学会副理事长、广东省石油学会副理事长。The Open Petroleum Engineering Journal、地球化学等杂志编委。在国内外学术刊物上发表论文140余篇, 合作专著5部。研究成果获国家级奖1项, 部委级奖8项。主要研究成果有: 分析研究了南海莺-琼盆地天然气的运移期、运移的地质地球化学条件、运移的相态等问题, 为进一步评价该区的天然气资源提供了科学依据; 发现了生物降解作用明显影响无环类异戊二烯烷烃碳同位素组成的现象, 并证实可利用沥青质热解产物中正构烷烃单体碳同位素值对生物降解程度中等以上的原油进行油/油对比; 用生烃动力学方法将有效气源岩的判识与评价相结合, 为液态正烷烃单体碳同位素组成在油/源对比中的应用提供了实验依据; 将沥青质的化学降解与油藏开发中的实际需要直接结合起来, 探讨化学降解方法在提高油藏采收率方面的理论可能性; 完成了国内首个用低成熟海相碳酸盐岩样品得出的生烃动力学定量模型, 对我国下古生界海相地层的油气资源评价具有重要的学术价值; 定量探讨了原油裂解过程中气、液、固三相物质的消长变化及其相关关系, 建立了从储层固体沥青入手的、适用于原油裂解天然气的资源量预测模型; 采用全油正构烷烃绝对定量及正常油/凝析油混合配比实验方法, 对塔里木盆地塔中地区气侵分馏作用对油气藏的改造进行了定量评估, 证明大量断裂体系是控制气侵作用强弱的主要因素, 展示了气侵作用的强弱分布规律; 通过对塔里木盆地海相原油中的沥青质组分的热裂解模拟实验, 从气态烃产率及碳同位素演化、焦沥青的生成等方面, 探讨了沥青质作为特殊气源的生气机理; 对四川盆地内处于不同成熟度阶段的二叠系大隆组烃源岩的研究结果表明, 高-过成熟烃源岩以及存在不同岩性夹层的烃源岩干酪根中的键合态生物标志物很难同其抽提物中的游离态生物标志物进行直接对比, 采用干酪根催化加氢热解技术可以较大程度上帮助消除热成熟作用的影响以及烃源岩夹层间运移烃的干扰, 所提取的键合态生物标志物能够有效地应用于高-过成熟烃源岩的分子地球化学表征及油源对比研究; 研制了一套油砂沥青热碱水萃取分离装置, 实验对比了内蒙古图牧吉和四川厚坝两地油砂沥青分离过程中温度和碱的加入量、通气条件及加工助剂等工艺因素及黏土矿物的含量、油砂岩的胶结程度及胶结方式、油砂的砂颗粒粒径、油砂层遭受风化作用的程度等岩性因素对沥青有效分离的影响, 为设计更为合理的油砂开采工艺流程提供了实验依据。培养博士后、博士和硕士研究生20多名。

## 研究领域:

有机地球化学

## 获奖及荣誉:

获得中国科学院科技进步一等奖和三等奖各1项、中国科学院自然科学一等奖和二等奖各1项及三等奖2项、广东省自然科学二等奖和科学技术二等奖各1项。1989年获首届中国科学院院长奖学金优秀奖, 1997年获首届广东省优秀青年科学家奖, 1998年被评为中国科学院有突出贡献的中青年专家, 2003年当选国际欧亚科学院院士。

## 代表论著:

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- Liangliang Wu, **Ansong Geng\***, Differences in the thermal evolution of hopanes and steranes in free and bound fractions. *Organic Geochemistry*, **2016**, 101:38-48.
- Fang Yuan, Yuhong Liao, Yunxin Fang & **Ansong Geng\***, Oil-source correlation of Lower-Triassic oil seepages in Ni'erguan village, Southern Guizhou Depression, China. *Acta Geochimica*, **2016**, 35(1):50-63.
- Liangliang Wu, Yuhong Liao, **Ansong Geng\***, Investigation of hydrolysis released aromatic hydrocarbons from Permian kerogens at different maturities in the Sichuan Basin, China. *Journal of Analytical and Applied Pyrolysis*, **2015**, 114, 47-59.

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18. WANG Tongshan, **GENG Ansong\***, XIONG Yongqiang, GENG Xinhua, Calculation for material balance of the pyrolysates generated from marine crude oil: A prediction model of oil cracking gas resources based on solid bitumen in reservoir. *Chinese Science Bulletin*, **2007**, 52(11): 1532-1539.
19. GENG Xinhua, **GENG Ansong\***, XIONG Yongqiang, LIU Jinzhong, ZHANG Haizu and ZHAO Qingfang, Kinetic study of the hydrocarbon generation from marine carbonate source rocks characterization of products of gas and liquid hydrocarbon. *Chinese Science Bulletin*, **2006**, 51(23), 2885-2891.
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承担科研项目情况：

1. 不同储集环境中原油组成与赋存相态演化 - 中国科学院战略性先导科技专项（A类）子课题任务（2017-2021）。
2. 储层固体沥青的生成演化与资源分布 - 国家十三五科技重大专项专题（2017-2020）。

3. 上扬子地区震旦系和下寒武统烃源岩的地球化学特征对比研究 – 有机地球化学国家重点实验室基本科研业务费专项重点领域项目（2016-2019）。

4. 页岩气新的可采性评价指标的研发 -- 中国科学院战略性先导科技专项（B类）子课题（2014-2018）。