化学学报 1988 46 (5): 489-491 ISSN: 0567-7351 CN: 31-1320/06

甲烷、氮、硫化氢、氨和水混合物的放电反应

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收稿日期 修回日期 网络版发布日期 接受日期

摘要 以CH4、N2加热含氨、硫化氢水相混合物, 在3500V高压、电火花连续放电24h, 考察H2S在化学进化中的作用. 气相用质谱分析 , 水相经浓缩纯化并制成衍生物, 气相色谱测定有14种氨基酸. 体系中若无硫化氢时, 只生成六种氨基酸. 这表明硫是合成生命基础分子的必需元素, 可能在原始地球空间的化学进化过程中起重要作用.

关键词 氨基酸 水 气相色谱 氮 氨 赖氨酸 硫化氢 甲烷 电化学反应 火花放电

分类号 0646

Electric discharge reactions in the mixture of hydrogen sulfide, methane, nitrogen, ammonia and water

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Abstract An elec. discharge experiments with gaseous mixture of methane, nitrogen, hydrogen sulfide, ammonia and water was carried out and the products were analyzed by mass spectrometry and gas chromatog. Methionine was synthesized by elec. discharge in the presence of H2S and 14 amino acids were characterized, of which 13 occur in proteins. From the results it is suggested that hydrogen sulfide plays an important role in the synthesis of more complicated amino acids during chem. evolution both on primitive earth and in interstellar space.

Key words AMINO ACID WATER GAS CHROMATOGRAPHY NITROGEN AMMONIA LYSINE HYDROGEN SULFIDE METHANE ELECTROCHEMICAL REACTION SPARK DISCHARGE

DOI:

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