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(Laurylammmonium)(Phenyl Phosphates)塩の逐次相転移、誘電秩序および液晶性

（東北大多元研）内川翔太、星野哲久、武田貴志、芥川智行、（北大電子研）野呂真一郎、中村貴義、
（南京大学）Zhong-Sheng Cai, Li-Min Zheng

Title, Successive Phase Transition, Dielectric Ordering, and Liquid Crystalline Behavior of Simple (Laurylammonium)(Phenyl Phosphates) Salts

Zhong-Sheng Cai, Shota Uchikawa, Norihisa Hoshino, Takashi Takeda, Li-Min Zheng, Shin-ichiro Noro, Takayoshi Nakamura, Tomoyuki Akutagawa

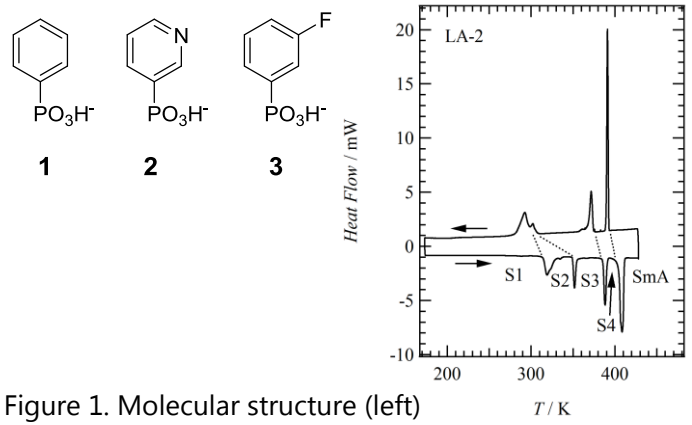

Figure 1. Molecular structure (left) of anion and phase transition behavior (right).

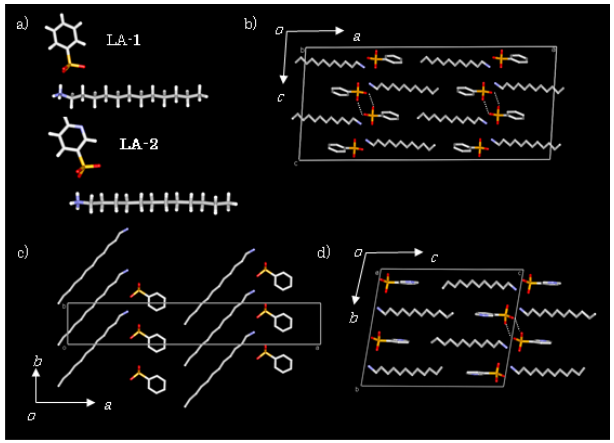

Figure 2. X-ray crystal structural analyses of 1:1 salts.

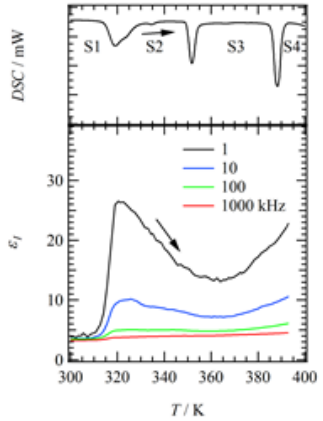

Figure 3. phase transition and dielectric ordering.

3種類の単純1：1塩である(laurylammonium) – phenyl (3-pyridyl) phosphate 塩の結晶構造、相転移挙動、誘電物性および液晶性に関する検討を行った。全ての1：1塩は、逐次的な固相－固相転移と固相ースメクチックA相転移を示した。ピリジル基から成るフォスフェートアニオン塩では、低温の反強誘電体相から高温の常誘電体相への相転移が出現し、これはピリジル基の分子回転運動に起因する双極子モーメントの秩序化による。

Successive phase transitions of three kinds of simple 1:1 organic salts of laurylammonium (LA) – phenyl (3-pyridyl) phosphate derivative were examined in terms of thermal properties, single crystal X-ray structural analyses, powder X-ray diffractions, and dielectric responses. All 1:1 simple organic salts showed the successive solid-solid and solid – smectic A (SmA) phase transition. The antiferroelectric-paraelectric phase transition couple with the flip-flop motion of 3-pyridyl ring was observed.