

Title	Study on multi-layer recording paper
Sub Title	
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Publisher	慶應義塾大学藤原記念工学部
Publication year	1965
Jtitle	Proceedings of the Fujihara Memorial Faculty of Engineering Keio University (慶應義塾大学藤原記念工学部研究報告). Vol.18, No.71 (1965.) ,p.109(45)- 109(45)
JaLC DOI	
Abstract	
Notes	Summaries of Doctor and Master Theses Master of Engineering, 1965 Applied Chemistry
Genre	Departmental Bulletin Paper
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO50001004-00180071-0045

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Study on Multi-Layer Recording Paper

Hiroyuki KANEKO*

The electrostatic recording paper with good mechanical and electrical properties are studied. The recording papers which hold electrostatic charge are prepared by coating conductive and insulating layers. Adequate conductivity is obtained by coating with water soluble polymers.

1. The tensile breaking strength and elongation of the original base paper are 2.0 kg and 1.8 %, and they increase with coating of resins. But owing to the less affinities between insulating and conductive layers, the insulating layer over 109/sq. m. peels off.
2. The surface sp. resistances of polyelectrolyte films are 10^7 to 10^8 ohms, while that of water soluble non-electrolyte polymers are about 10^{10} to 10^{11} ohms. Their conductivities can be varied by adding polyelectrolyties or hygroscopic materials.
3. Electric properties of insulating layer are affected by under coated conductive layer. In case that the surface sp. resistance of insulating resin film, 109/sq. m. is 10^{12} ohms, it decreases to 10^9 ohms on conductive layer whose resistance is 10^8 ohms.
4. Good electrostatic image is obtained in the case of multi-layer systems.

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