

## 다목적실용위성2호 비행모델 열진공시험시의 오염 측정 및 분석

조혁진<sup>†</sup> · 문귀원\* · 우창욱\* · 이상훈\* · 서희준\* · 최석원\*(한국항공우주연구원)**Contamination Measurement and Analysis during KOMPSAT-2 FM Thermal Vacuum Test**

Hyokjin Cho, Guee-Won Moon, Chang-Wuk Woo, Sang-Hoon Lee, Hee-Jun Seo, Seok-Weon Choi

**Key Words:** KOMPSAT(다목적실용위성), Contamination(오염), Vacuum(진공), Satellite(인공위성)**Abstract :** In a space environment which satellites encounter after a launch from the earth, outgassing phenomena from the satellite surfaces occur because of high vacuum and hot thermal conditions. The outgassed materials are absorbed on the satellite's another surfaces, and then they can make an harmful effect on the performance of satellite's unit and change the thermal properties of the materials. And the particles from satellite and space also have a detrimental effects. During KOMPSAT(Korea Multi Purpose Satellite)-2 FM(Flight Model) thermal vacuum test which was performed for the satellite's feasibility check in space environment, the measurement and analysis of contamination due to the outgassing materials and particles from all sources were done. All contaminants were analyzed according to the method based on the ESA(European Space Agency) documents, each measurement method and result is described on this paper.

## 반 실린더형 홈을 가진 벤틸레이티드 디스크 브레이크에서의 국소열전달 측정 및 수치 해석

박성봉<sup>†</sup>(한양대 원) · 임창울\*(인제대 원) · 이대희\*\* · 김흥섭\*\* (인제대) · 이관수\*\*\* (한양대)**Local Heat Transfer Measurements and Numerical Analysis in the Ventilated Disc Brake with Semi-Cylindrical Grooves**

Sung Bong Park, Chang Yul Lim, Dae Hee Lee, Heung Seob Kim and Kwan Soo Lee

**Key Words :** Sung Bong Park, Chang Yul Lim, Dae Hee Lee, Heung Seob Kim and Kwan Soo Lee**Abstract :** A ventilated disc brake having semi-cylindrical grooves has been proposed to improve the thermal judder by way of heat transfer enhancement. The local heat transfer coefficients were measured in the flow passage of disc brake. These measured local heat transfer data were utilized to do the finite element numerical analysis which predicts the maximum temperatures on the disc brake. The results show that the maximum temperatures on the disc surface with semi-cylindrical grooves are approximately 35.2% lower than those without them.