

# 작용기([OH/NCO]) 비율이 폴리우레탄 점착제(PU-PSA)의 성질에 미치는 영향

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## Abstract

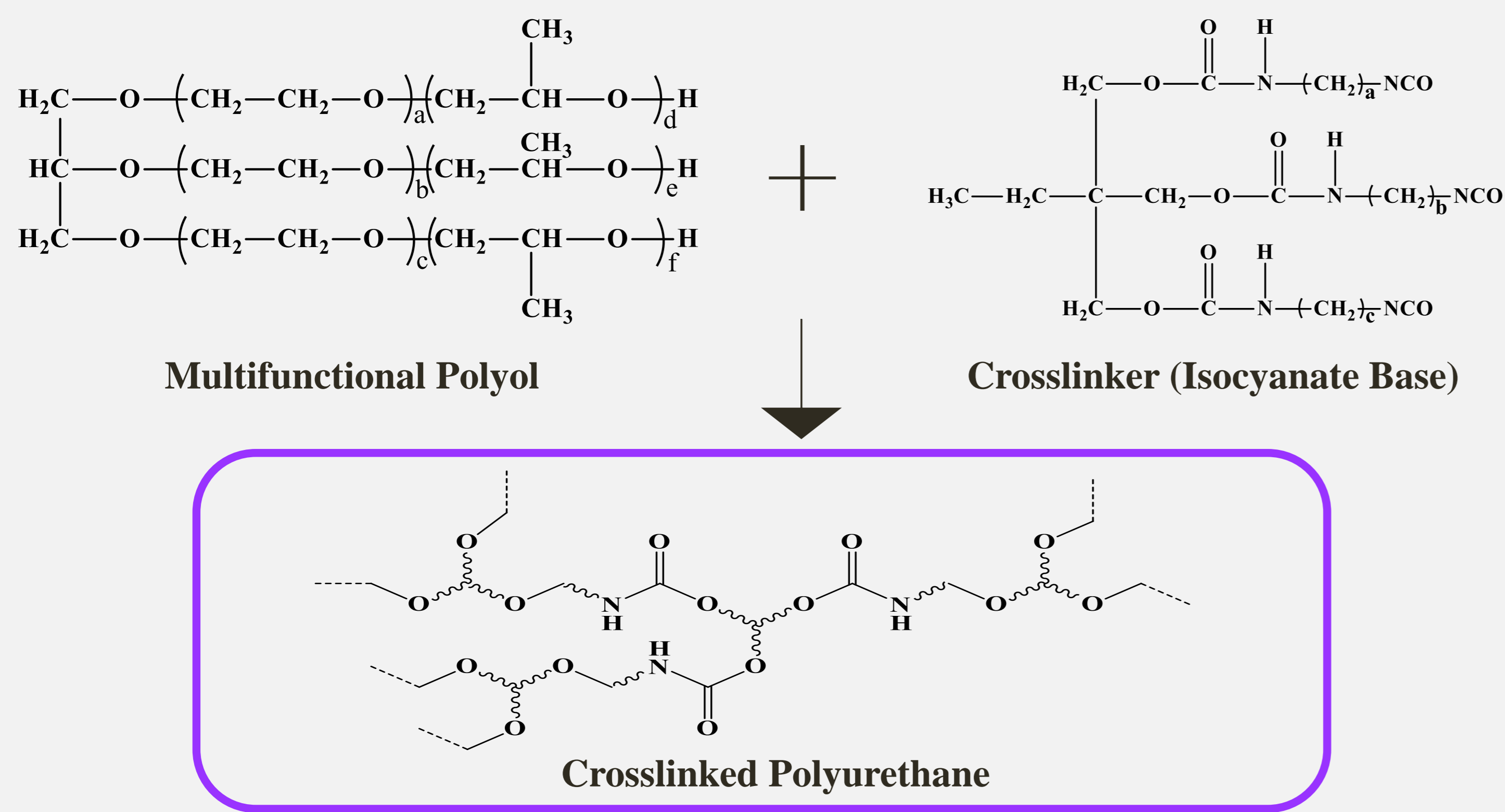
전사가 남지않는 고점착력을 가지는 폴리우레탄 점착제의 개발을 위하여 다양한 폴리올, 이소시아네이트의 분자설계를 통한 합성과 가교제를 연구하였다. 폴리올과 이소시아네이트의 비율의 제어를 통해, 전사가 남지않는 폴리우레탄 점착제의 합성 유무를 푸리에 변환 적외선 분광법(Fourier-Transform Infrared Spectroscopy)을 통하여 분석하였다. 합성된 우레탄 점착제의 구조와 특성을 알기위해 UV를 통한 투명성과, UTM을 이용한 180도 T-peel test하여, 본 실험에서 합성된 우레탄 점착제의 특성을 분석하였다.

## Objective

1. Synthesis of PU-PSA with no residue when exfoliating
2. Adjust adhesion strength of the PU-PSA
3. Estimate success of synthesis and performance of PU-PSA through FT-IR, UV-VIS, and UTM

## Experimental

### Scheme



(unit: mole)	Base Polyurethane				Crosslinker	
	functional group	3	2	2	2	3
Sample	Polyol 1	Isocyanate 1	Polyol 2	Polyol 3	Isocyanate 2	Isocyanate 3
#1	30	25	1		7.2	2.4
#2	30	25	1		21.6	2.4
#3	30	25		1	21.6	2.4

## Acknowledgement

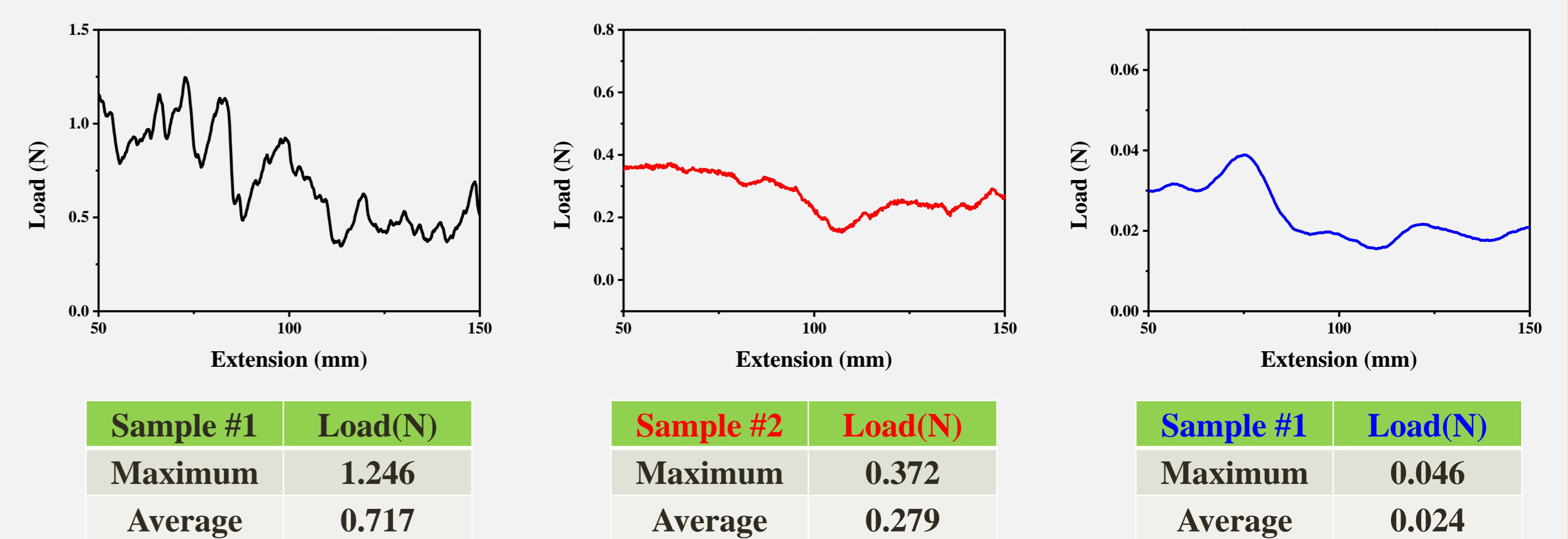
▶ This work was supported by the National Research Foundation of Korea(NRF) (No. NRF-2019R1A2C1087953)

## Results

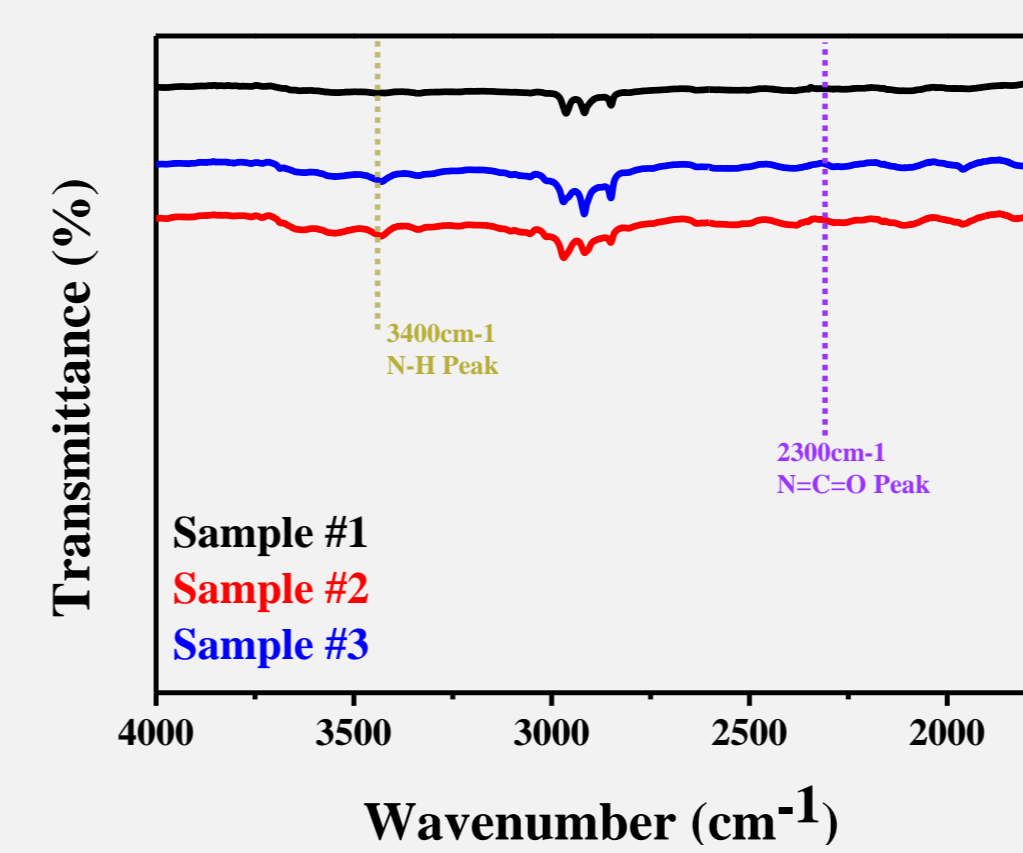
### After 180° Peel Test



### UTM 180° Peel Test

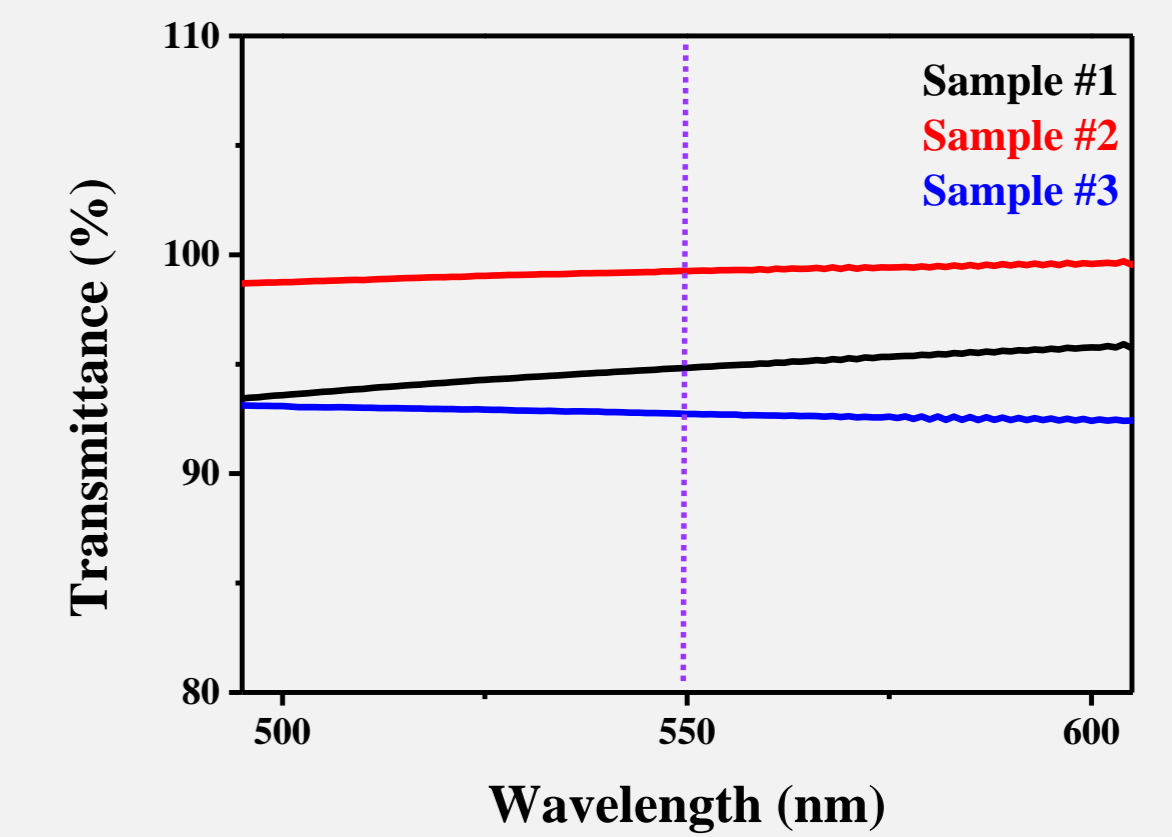


### FT-IR



Sample	NCO Peak(2300cm <sup>-1</sup> )
#1	Disappeared
#2	Disappeared
#3	Disappeared

### UV-VIS



Sample	Transmittance(550nm, %)
#1	94.83
#2	99.25
#3	92.73

\* All analysis was performed by applying Polyurethane-PSA to the PET Film as 15μm thick.

## Conclusion

- PU-PSA without residue when exfoliating was synthesized successfully
- Checked reduction of NCO Peak and N-H Peak through FT-IR
- Successfully varied adhesion strength while without remaining residue
- Sufficient transmittance applicable as a commercial PSA (over 90%)