

Simultaneous Acquisition of Microscale Reflectance and Normals

ACM SIGGRAPH Asia 2016

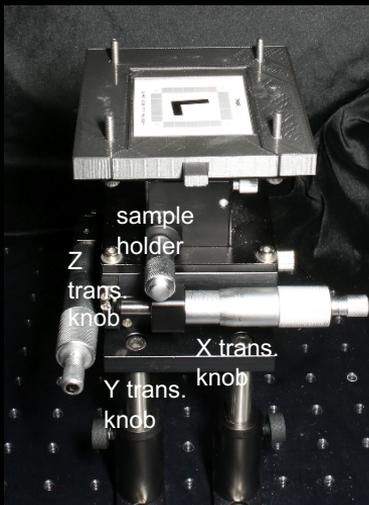
Supplemental Material #2

Giljoo Nam[†] Joo Ho Lee[†] Hongzhi Wu[§] Diego Gutierrez* Min H. Kim[†]

[†]KAIST [§]Zhejiang University, State Key Lab of CAD & CG ^{*}Universidad de Zaragoza, I3A

Acquisition System

Acquisition System



microscale stage



light-dome structure and sample holder



light dome (wired)



macro lens and light dome (wired)

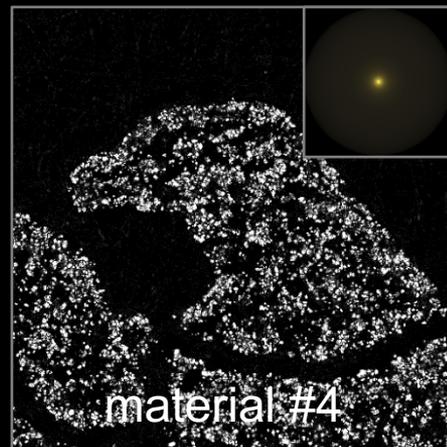
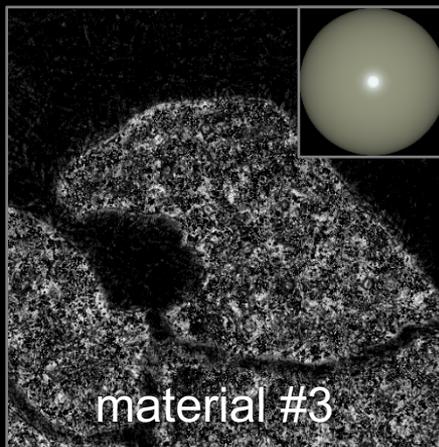
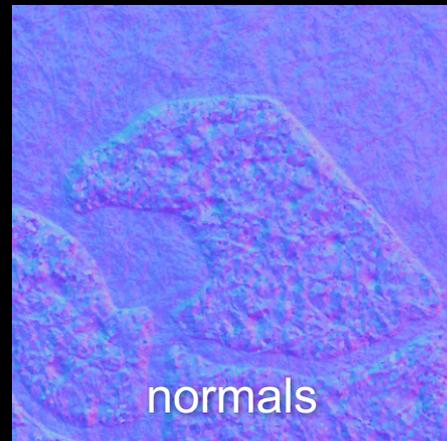
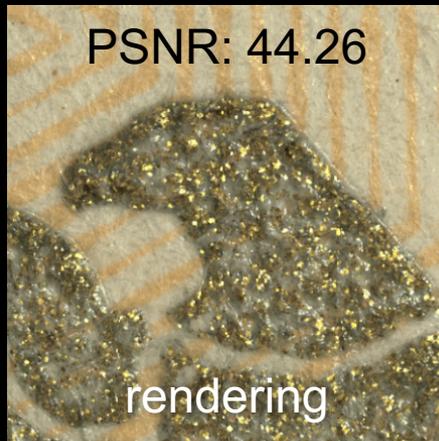
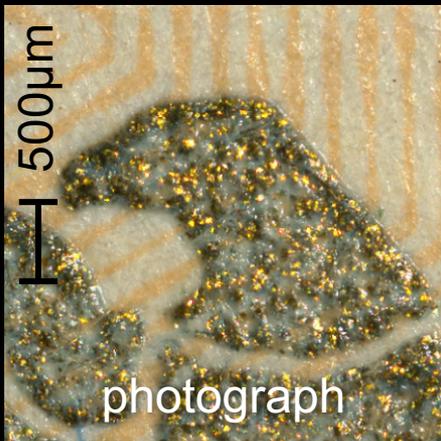
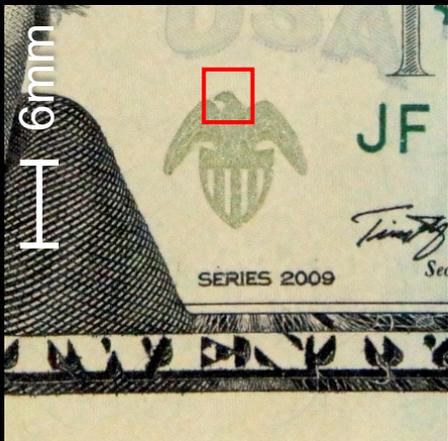


supporting structure (with vibration control)

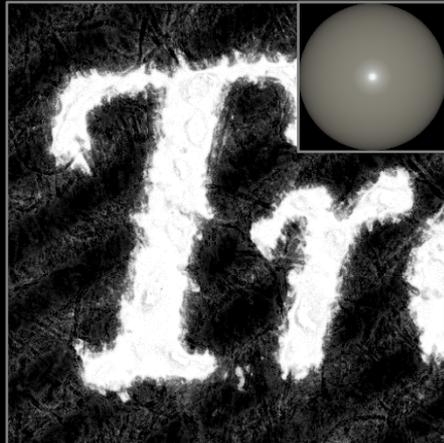
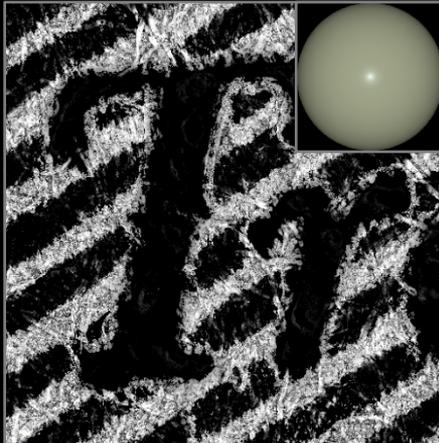
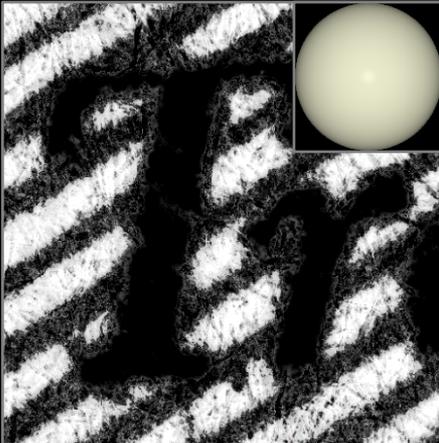
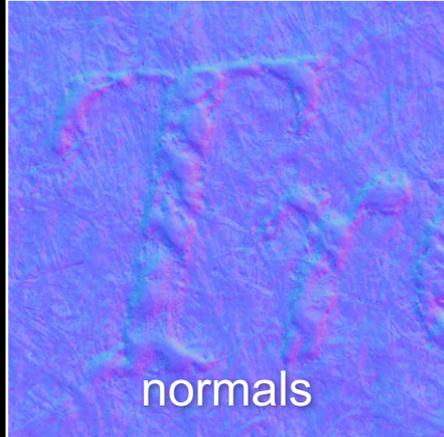
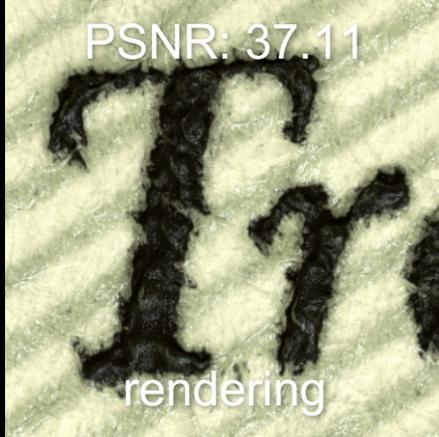
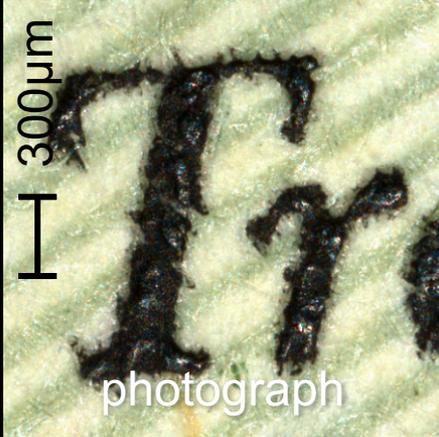
80(w) x 40(d) x 100(h) [cm]

Microscale Reflectance and Normal Datasets

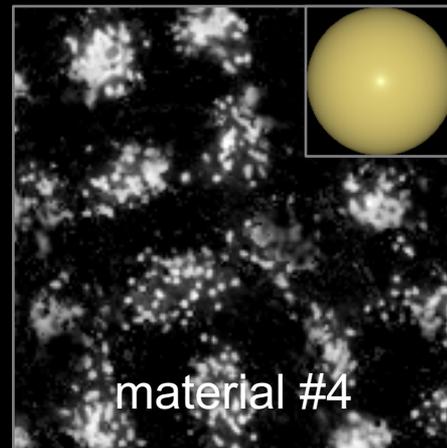
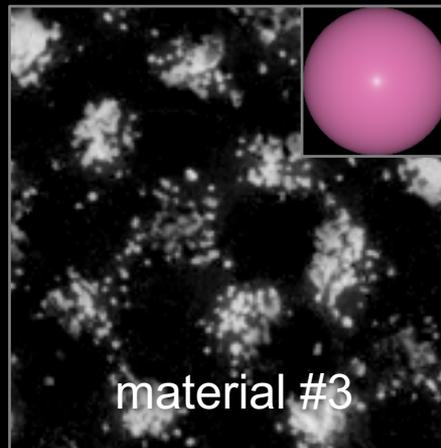
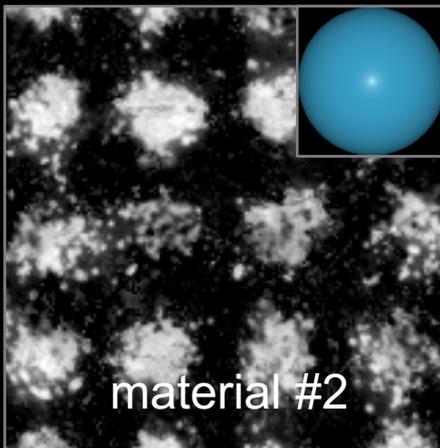
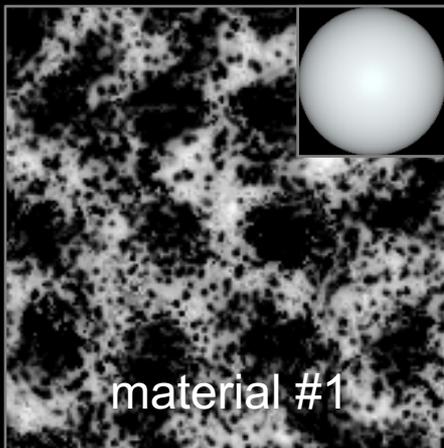
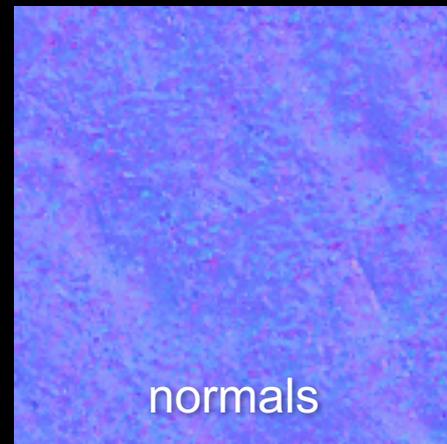
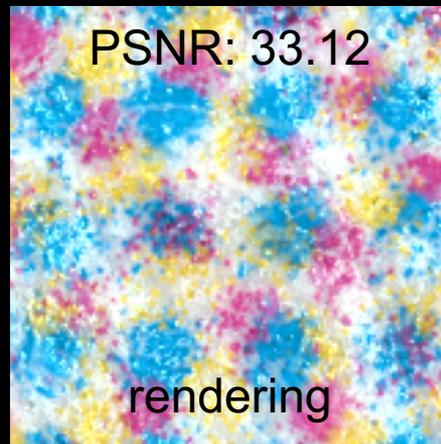
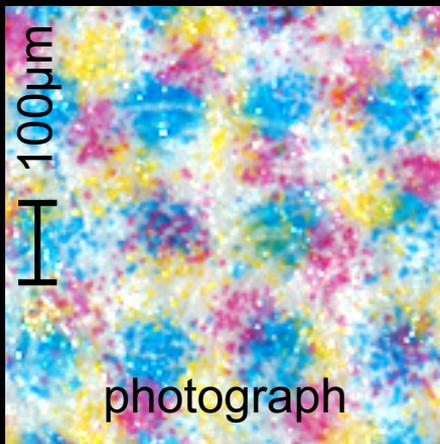
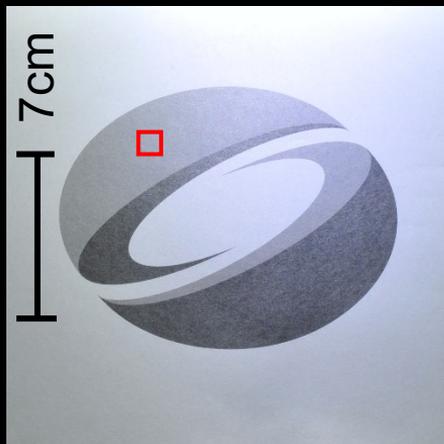
Dataset #1: Dollar bill (eagle)



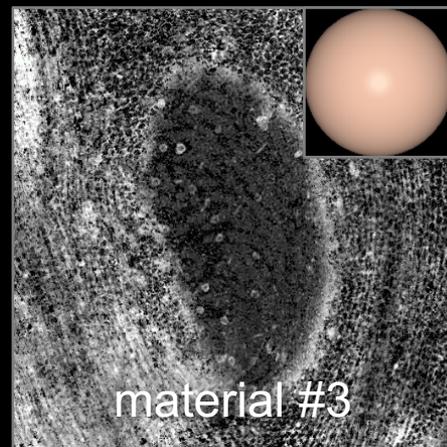
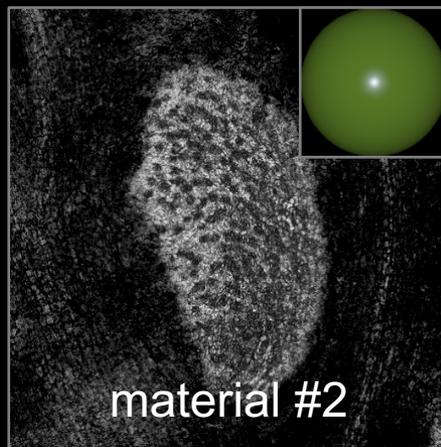
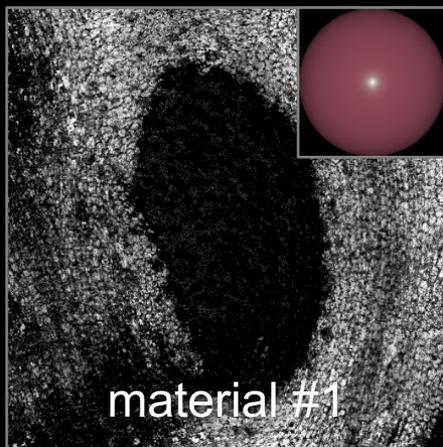
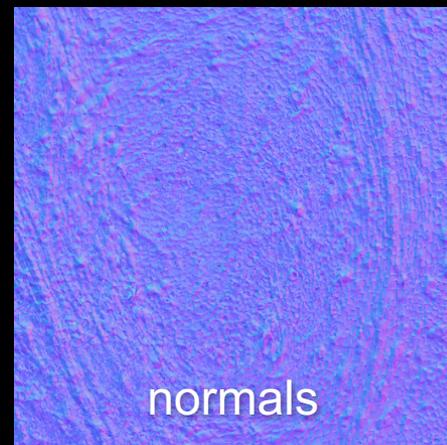
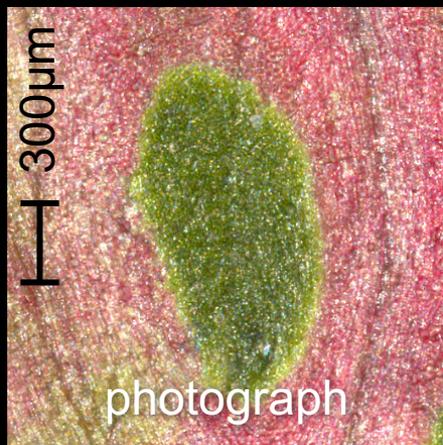
Dataset #2: Dollar bill (Tr)



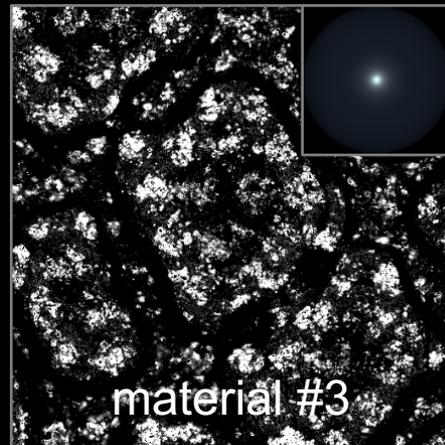
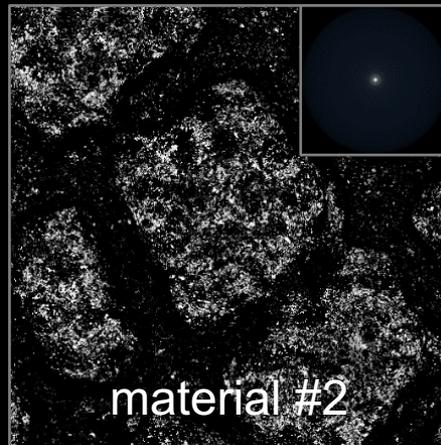
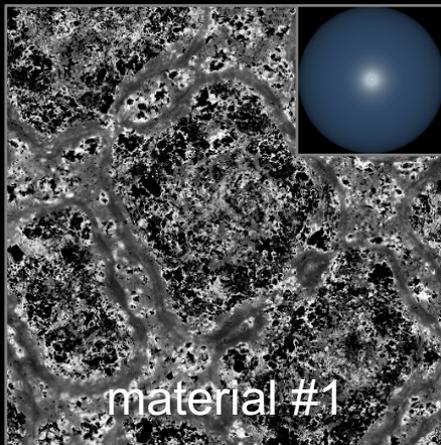
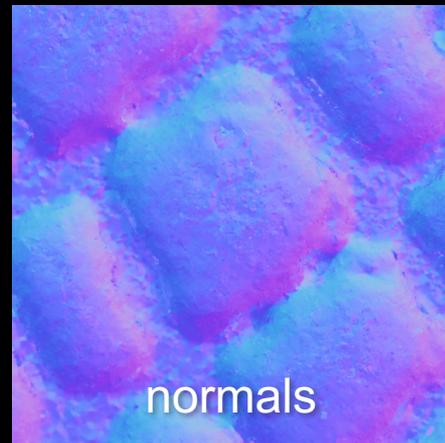
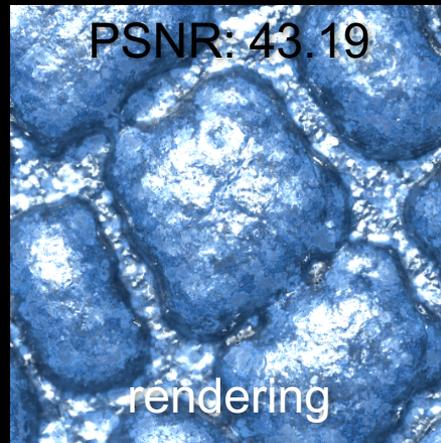
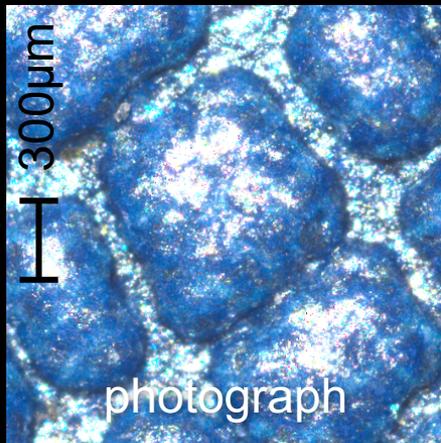
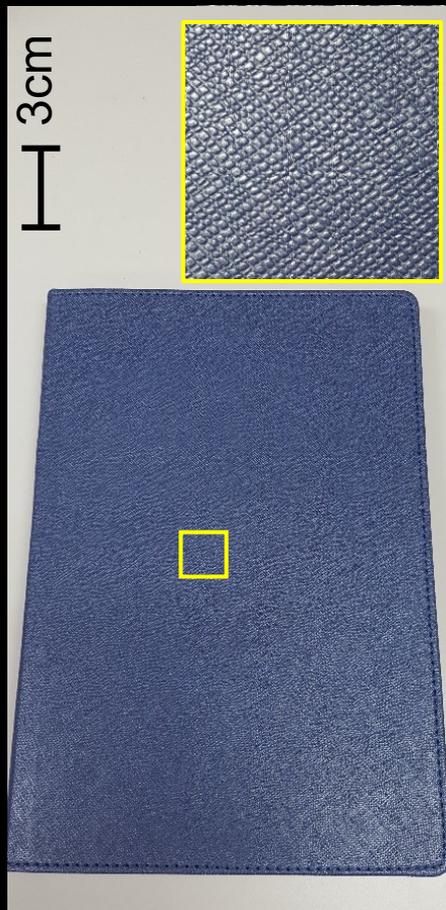
Dataset #3: Halftone printout (light grey)



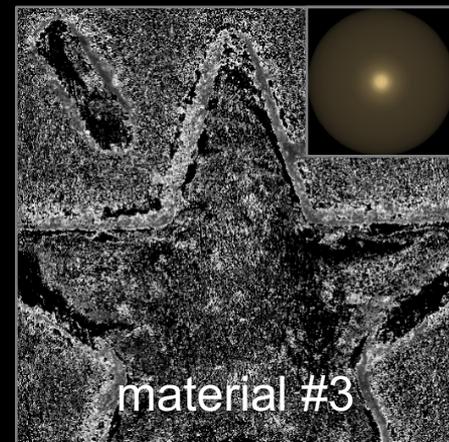
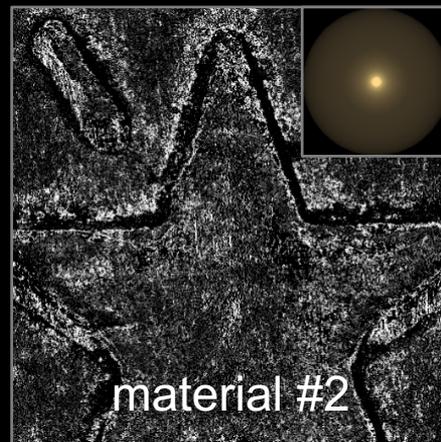
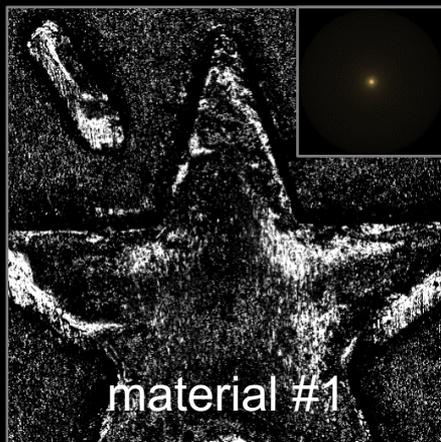
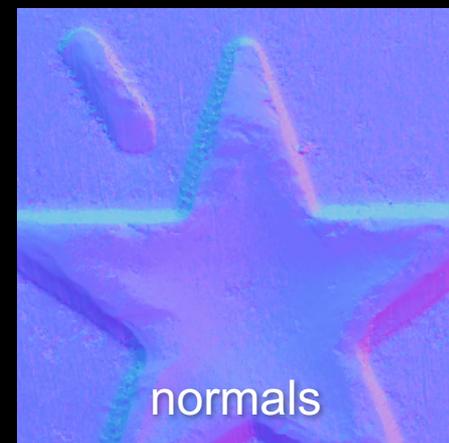
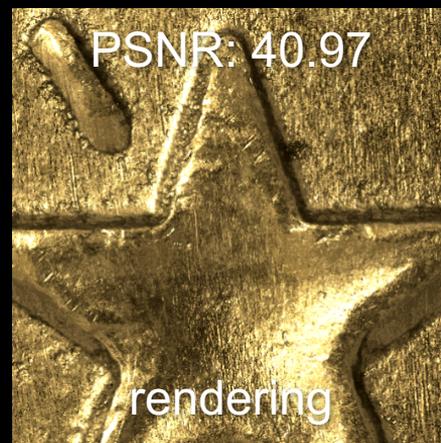
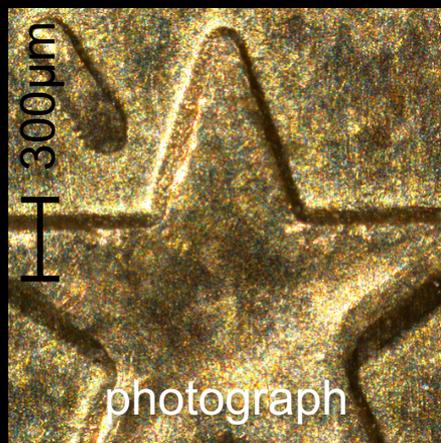
Dataset #4: Leaf



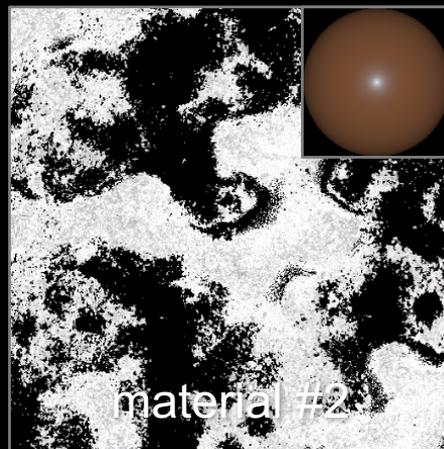
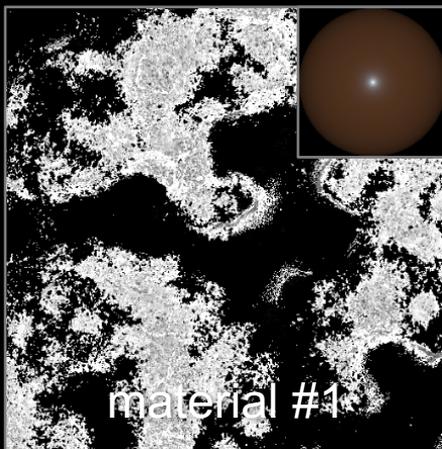
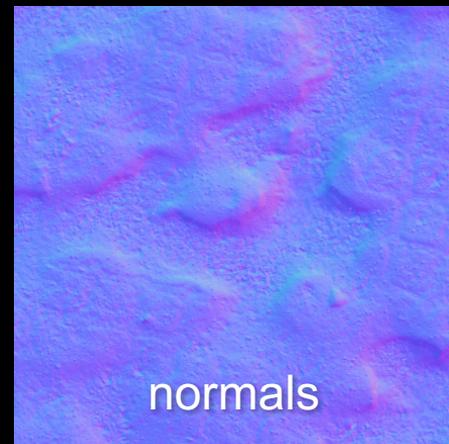
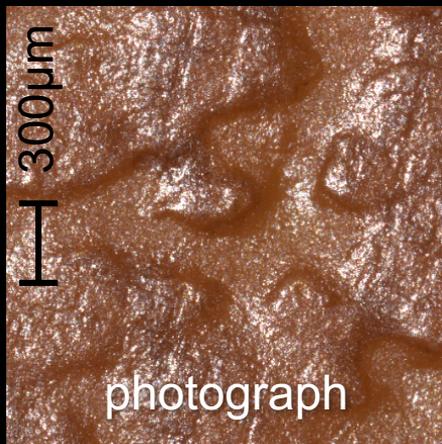
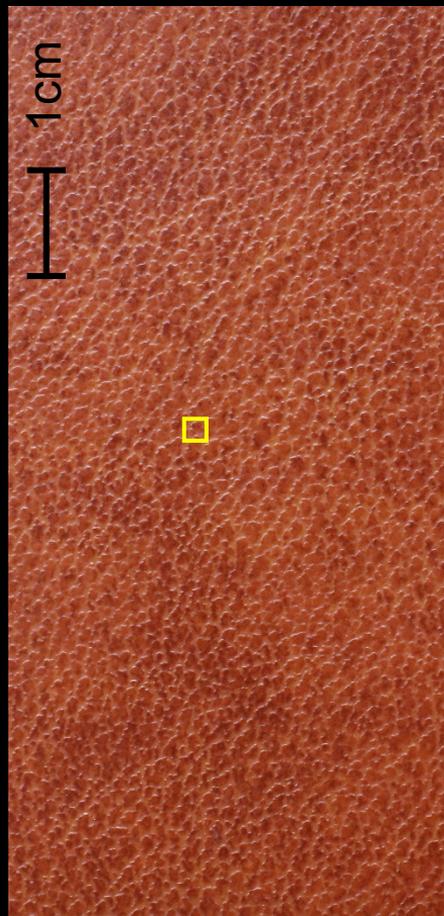
Dataset #5: Blue notebook



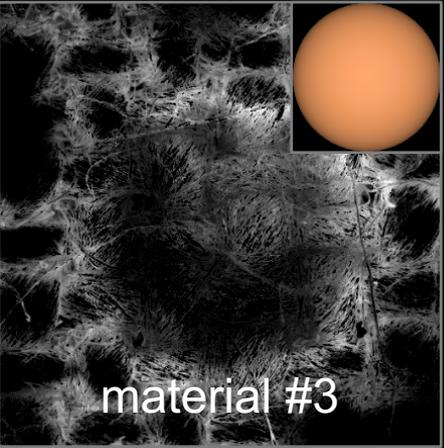
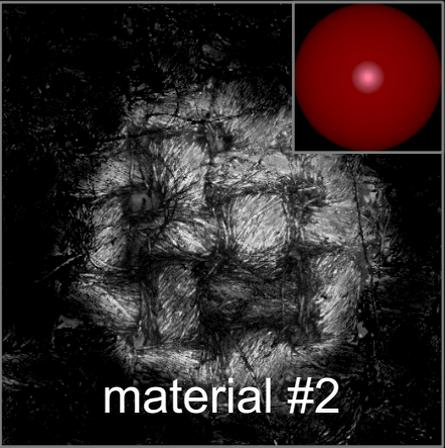
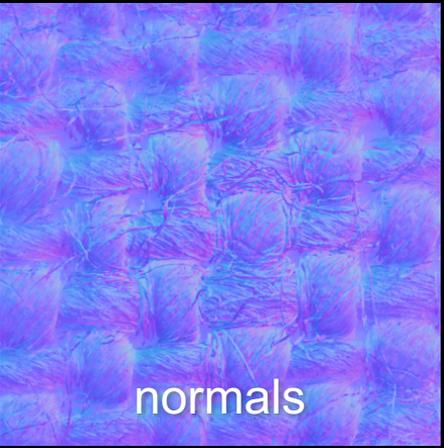
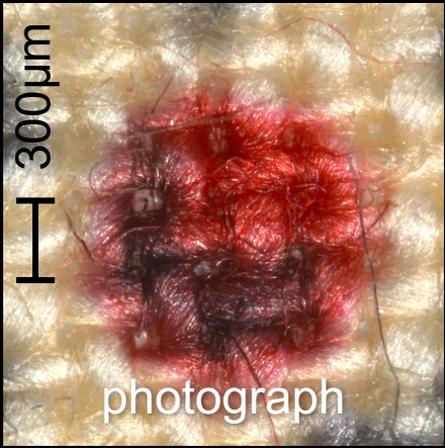
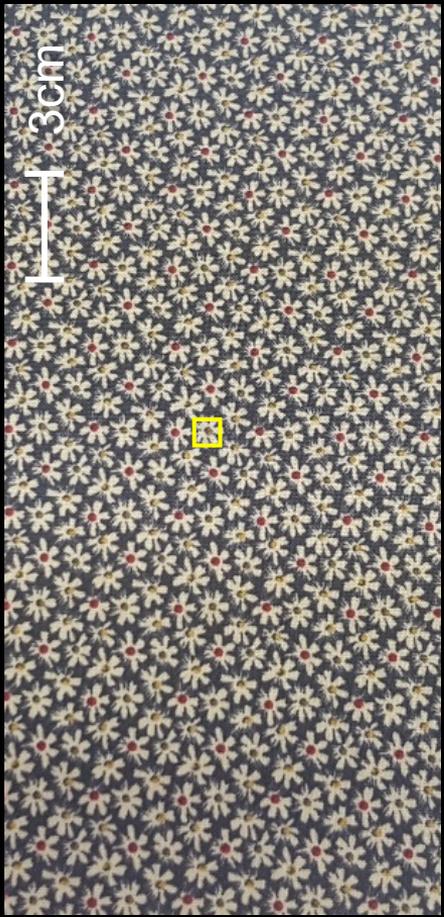
Dataset #6: Copper coin (star)



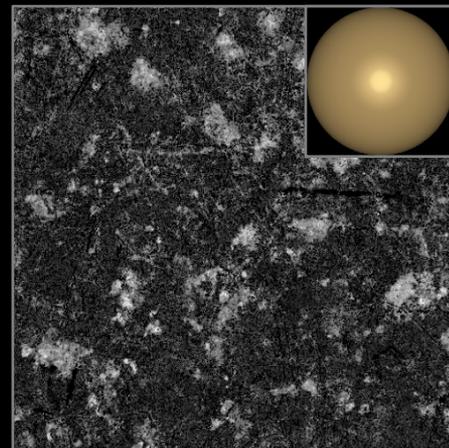
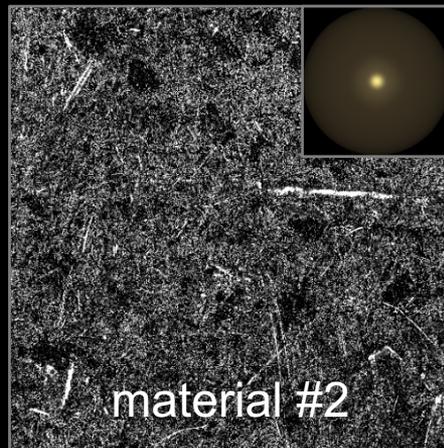
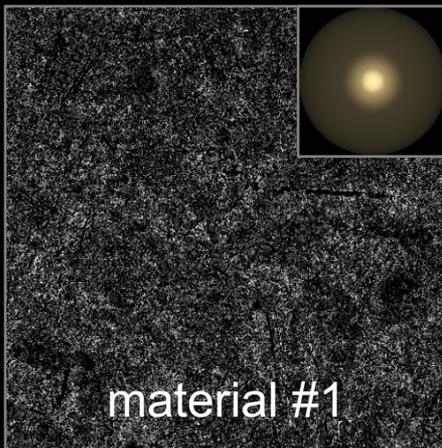
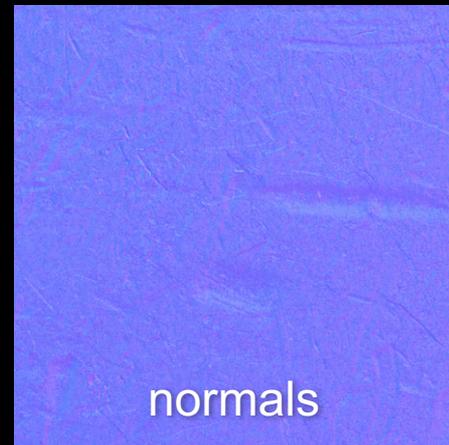
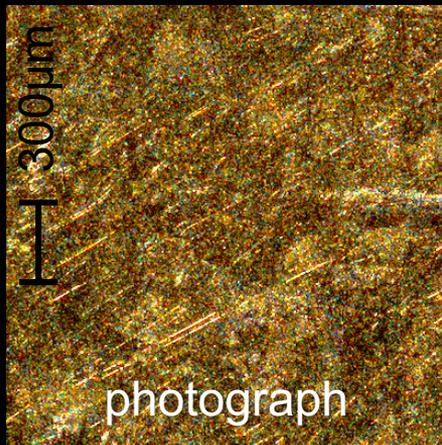
Dataset #7: Leather



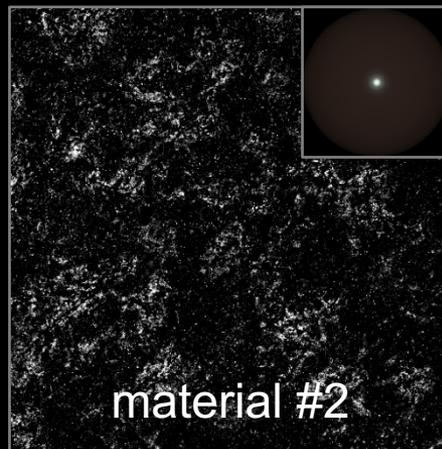
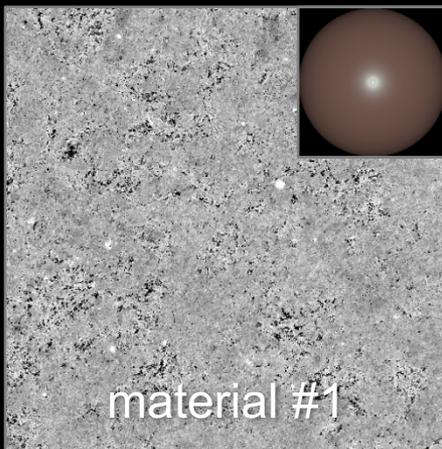
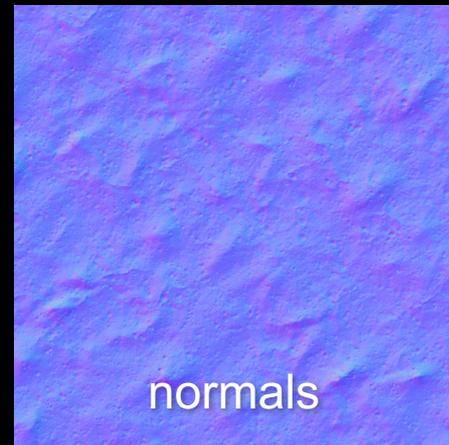
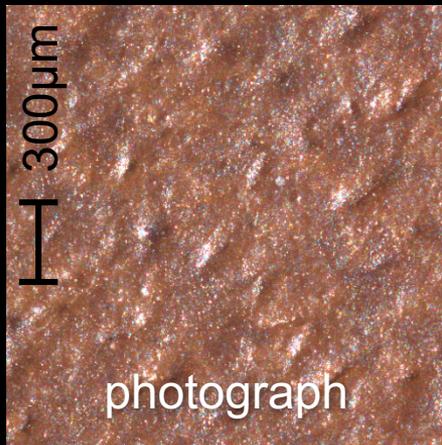
Dataset #8: Textile



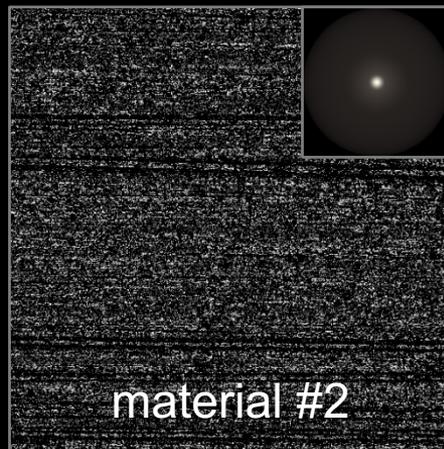
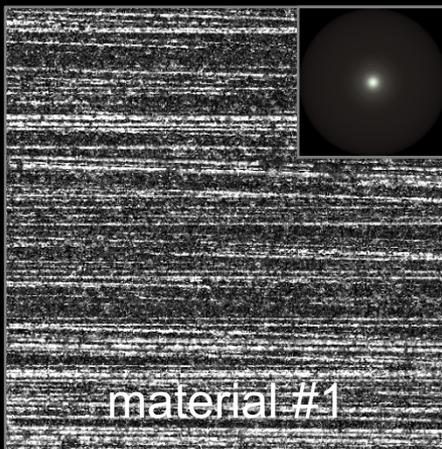
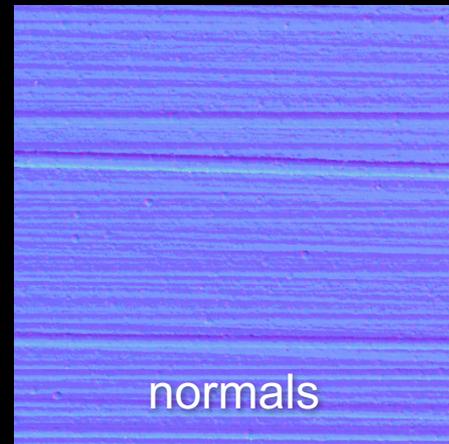
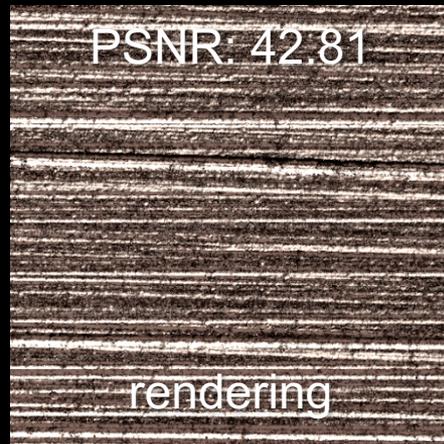
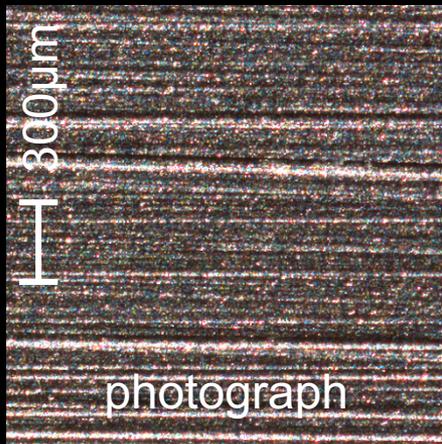
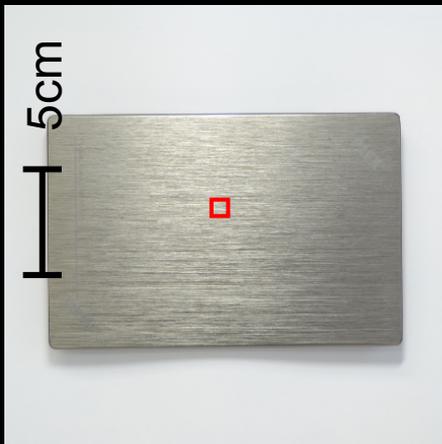
Dataset #9: Copper coin



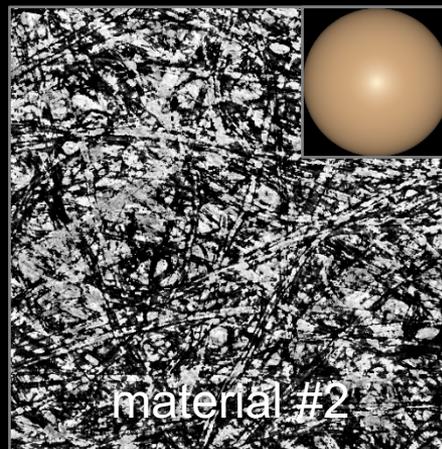
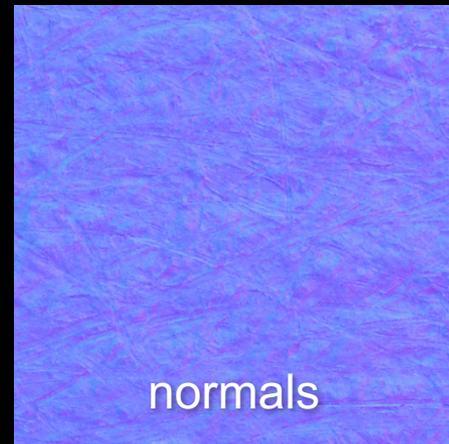
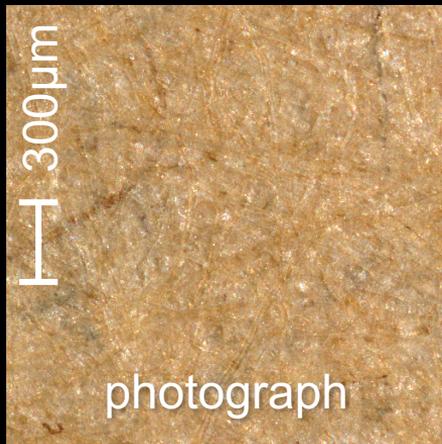
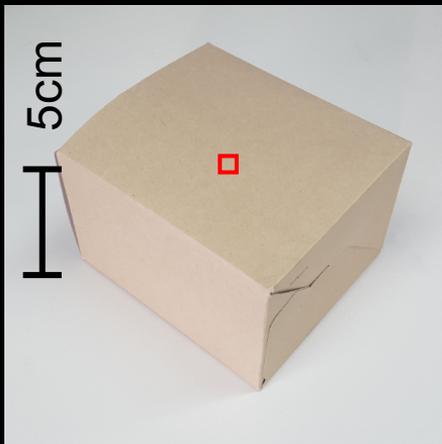
Dataset #10: Leather shoe



Dataset #11: Brushed aluminum case

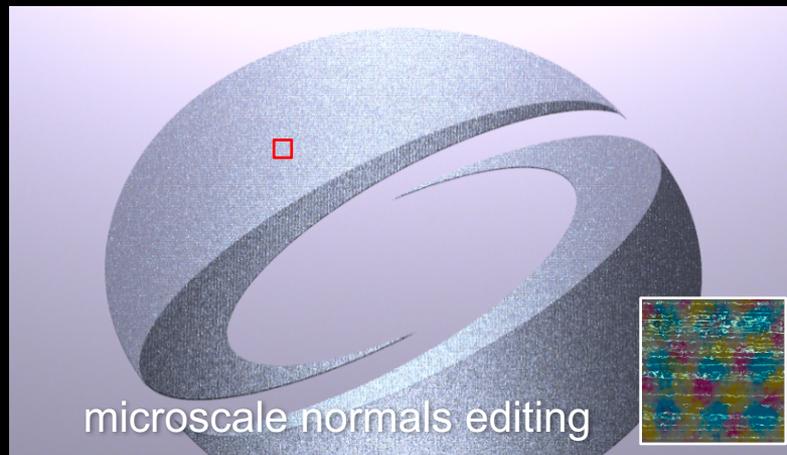
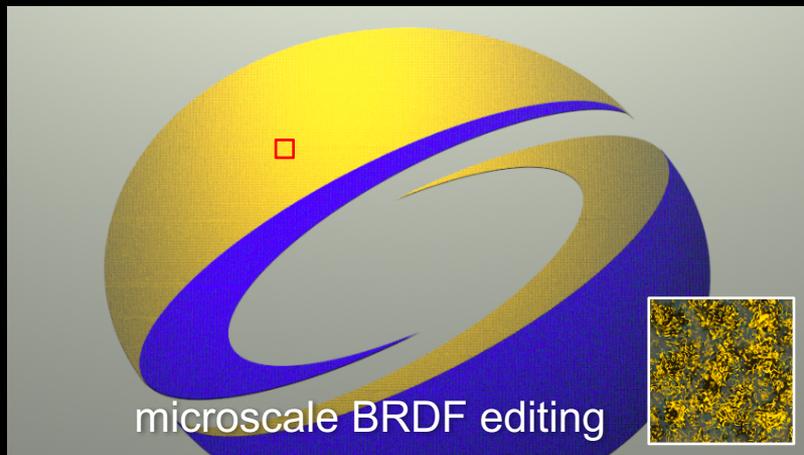
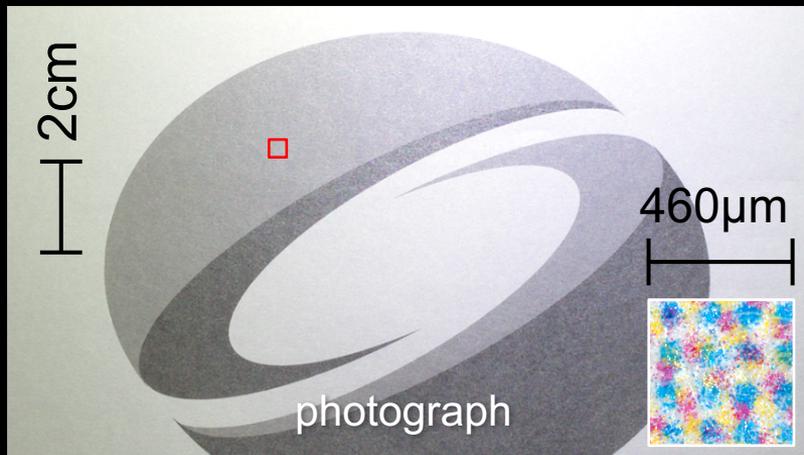


Dataset #12: Paper box



Microscale Appearance Editing

Dataset #3: Halftone printout



Dataset #6: Copper coin

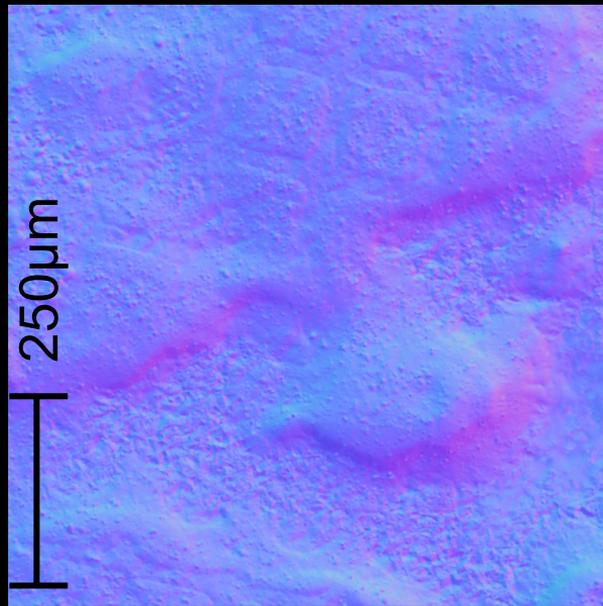


Comparison

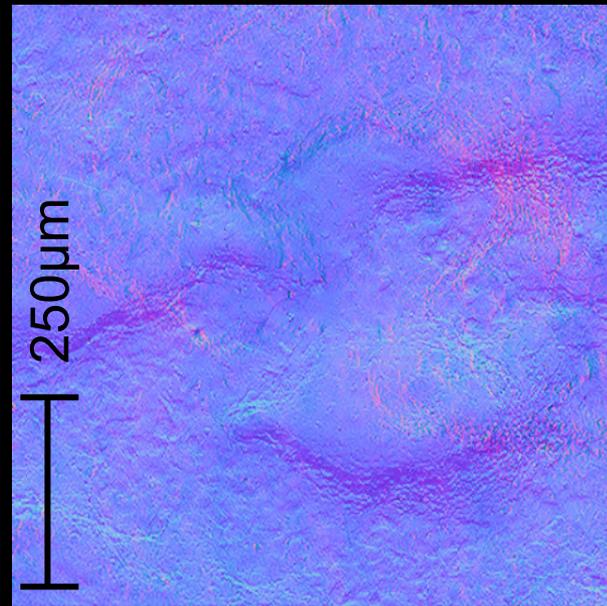
Dataset #7: Leather



photograph

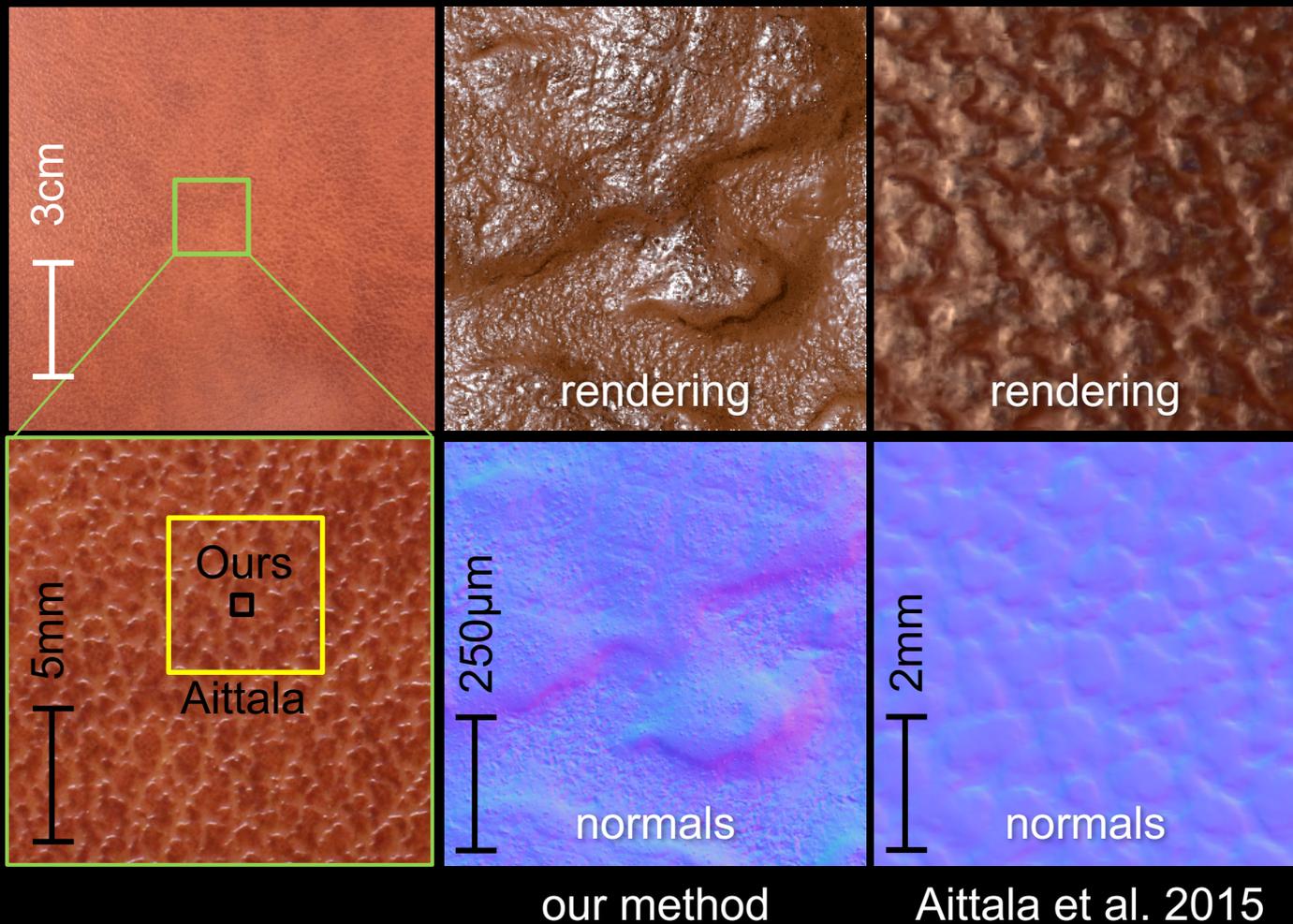


our method



micro-surface profiler
(reference)

Dataset #7: Leather

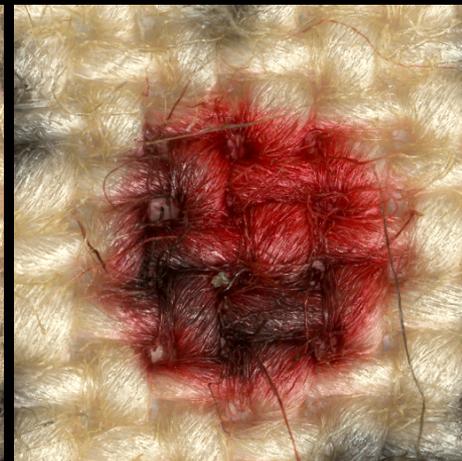
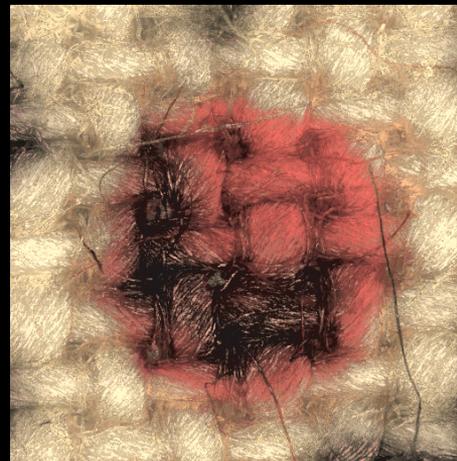
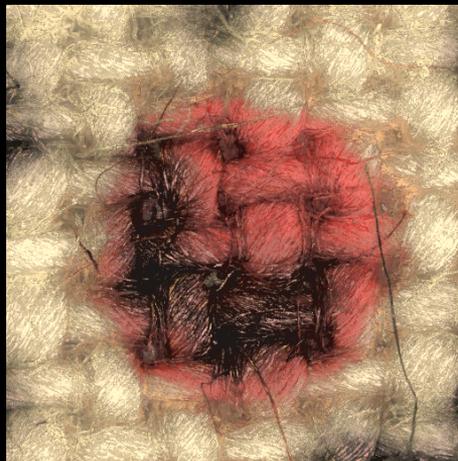
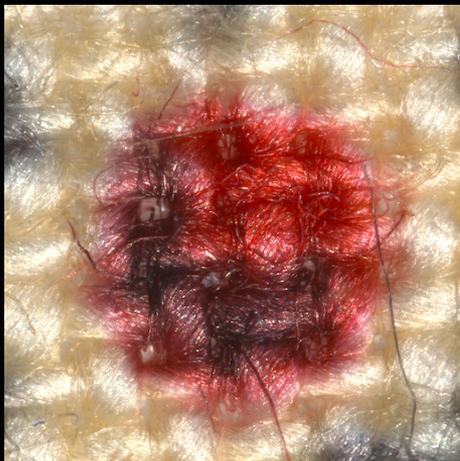


Textile

PSNR 29.49

PSNR 29.33

PSNR 36.51



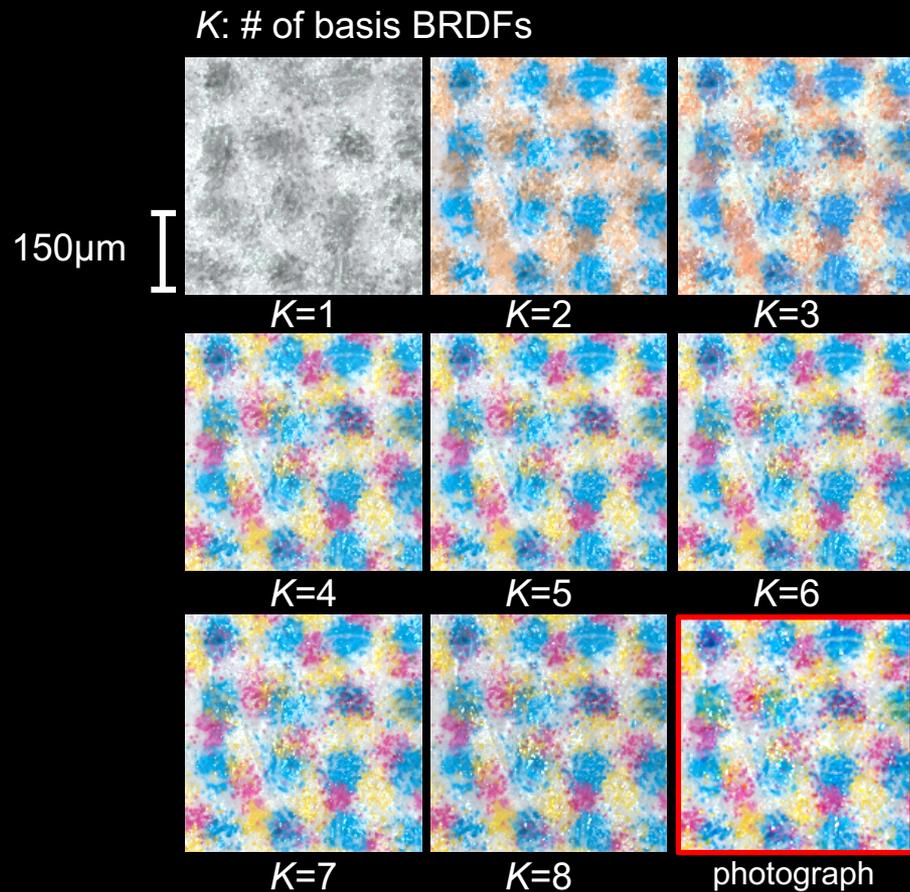
Photograph

Cook-Torrance

Oren-Nayar

Our method

Halftone printout



Reconstruction error (test)

