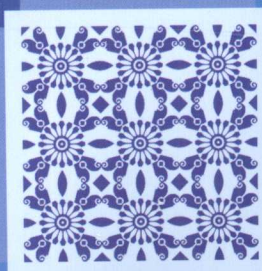


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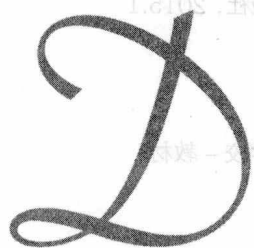
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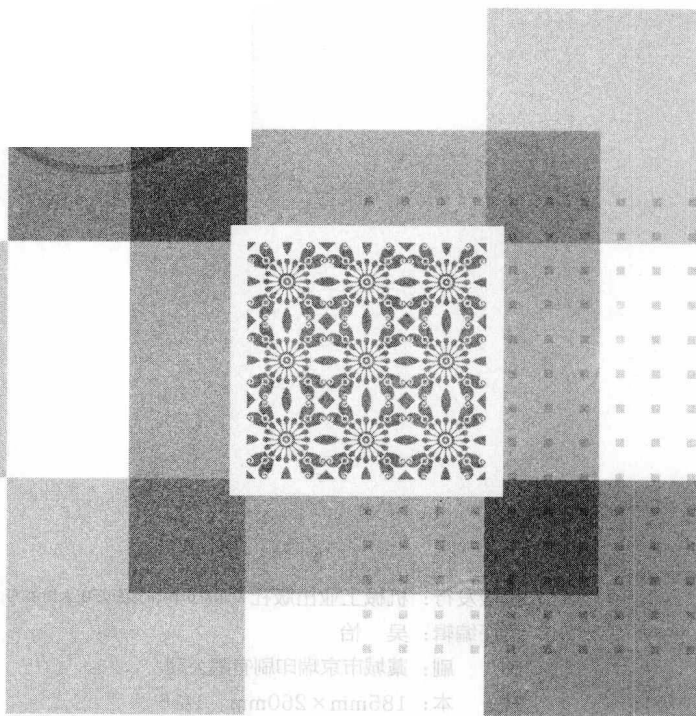
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DIGITAL IMAGE PROCESSING

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数字图像处理已成为高等院校电子信息工程、通信工程、信号与信息处理、计算机应用与软件等学科中一门重要的专业课。本书详细介绍数字图像处理的基本理论和主要技术, 内容包括数字图像处理基础、空域图像增强、频域变换、频域图像增强、图像复原、彩色图像处理、数学形态学图像处理、图像分割、小波变换与多分辨率分析、图像压缩编码、表示与描述等。特别是对数学形态学图像处理、小波变换与多分辨率分析等难点内容进行了精心梳理, 融入了作者多年研究与教学成果, 使得初学者更加容易入门。

本书理论与实际相结合, 理论分析深入浅出, 方法介绍详细具体, 实例演示清晰明了, 同时给出了部分关键算法的 Matlab 实现程序, 方便初学者学习扩展, 本书还提供教辅, 方便教学。本书可作为高等院校电子、计算机以及相关专业的本科和研究生教材或参考书, 也可供相关技术人员参考。

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(a)



(b)



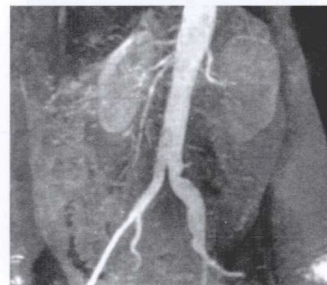
(c)



(d)



(e)



(f)

图 1-4

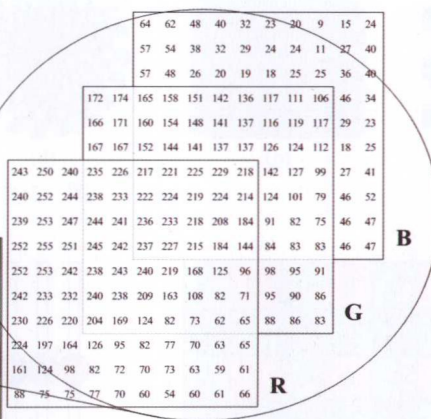


图 1-9



(a)

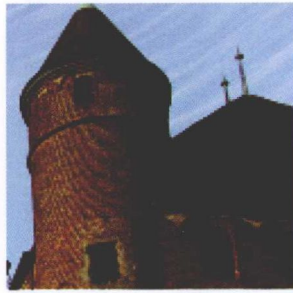


(b)

图 1-19



(a)



(b)

图 1-23

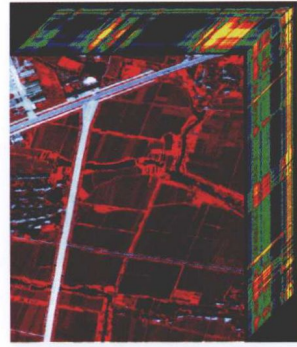


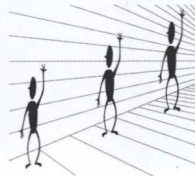
图 2-2



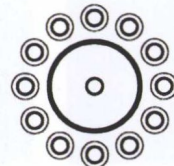
(a)



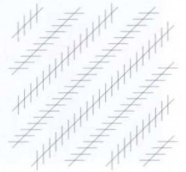
(b)



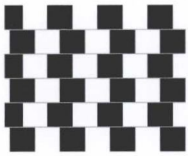
(c)



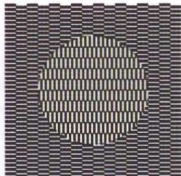
(d)



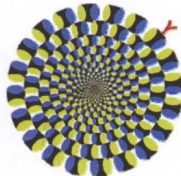
(e)



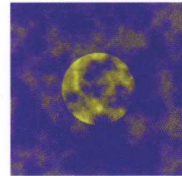
(f)



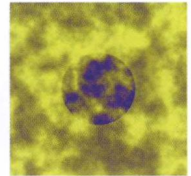
(g)



(h)



(i)



(j)

图 2-17

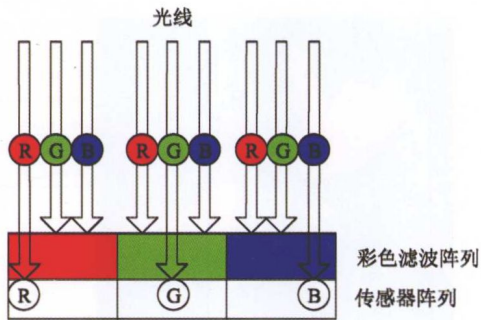
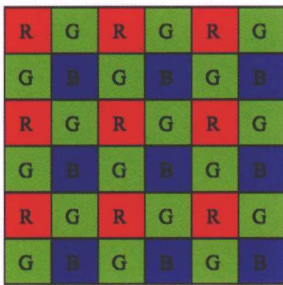


图 2-21

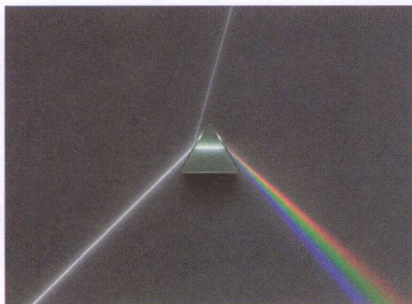
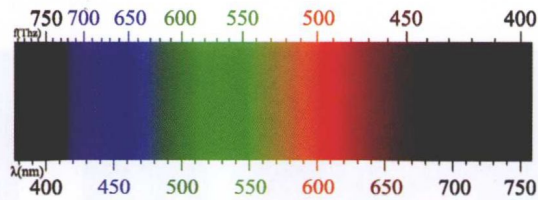


图 4-1



颜色	波长 (nm)	频率 (THz)
红	625 ~ 780	480 ~ 385
橙	590 ~ 625	510 ~ 480
黄	565 ~ 590	530 ~ 510
绿	500 ~ 565	600 ~ 530
青	485 ~ 500	620 ~ 600
蓝	440 ~ 485	680 ~ 620
紫	380 ~ 440	790 ~ 680

图 7-1

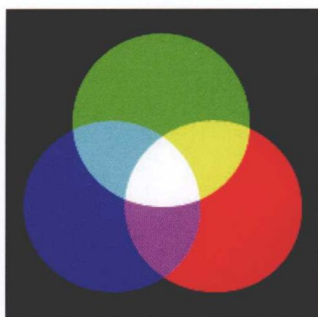


图 7-3

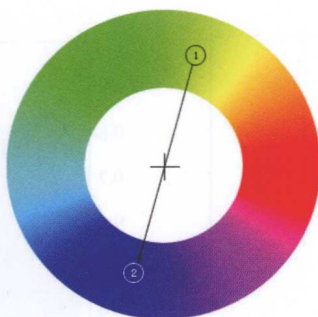


图 7-4

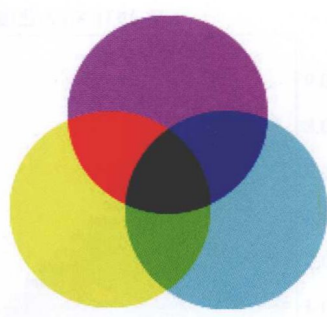


图 7-5

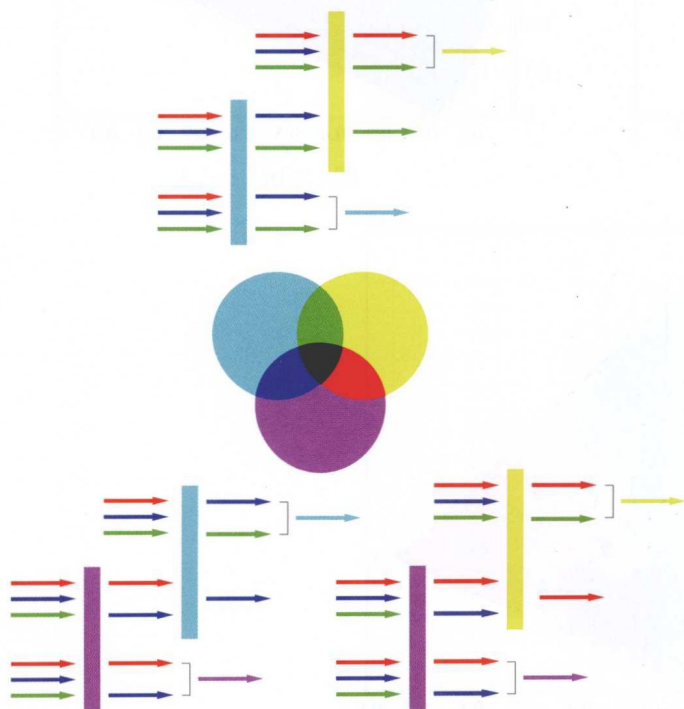


图 7-6

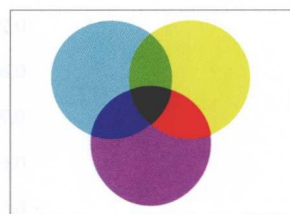
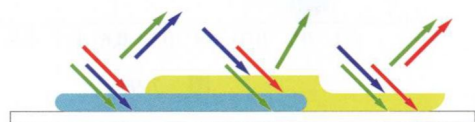


图 7-7

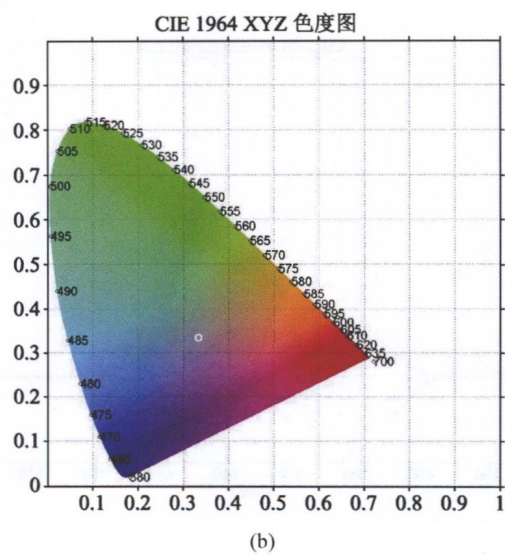
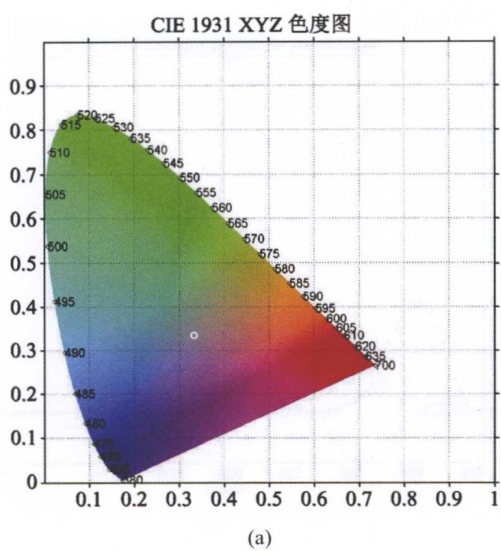


图 7-8

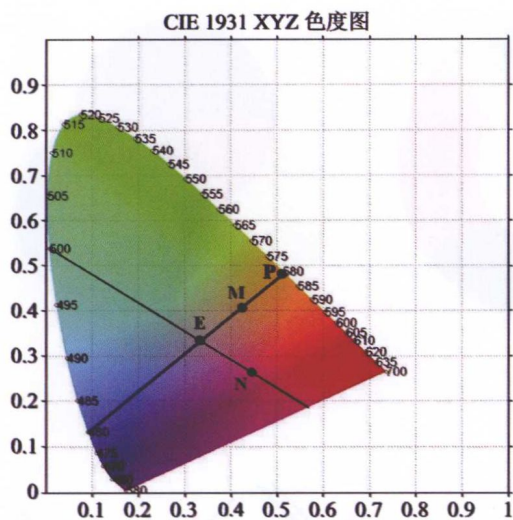


图 7-9

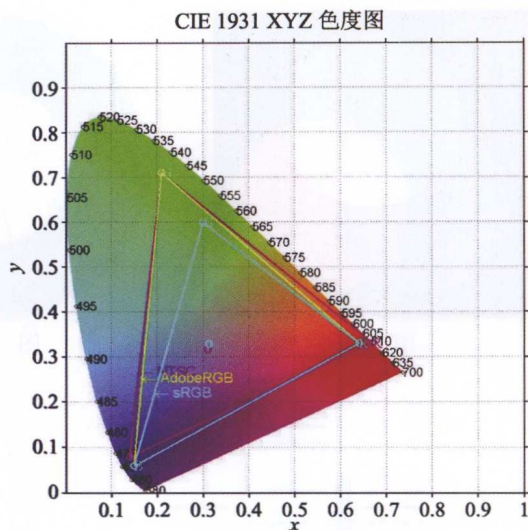


图 7-10

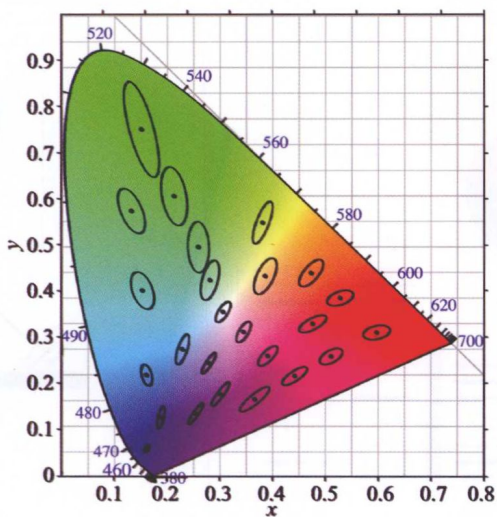
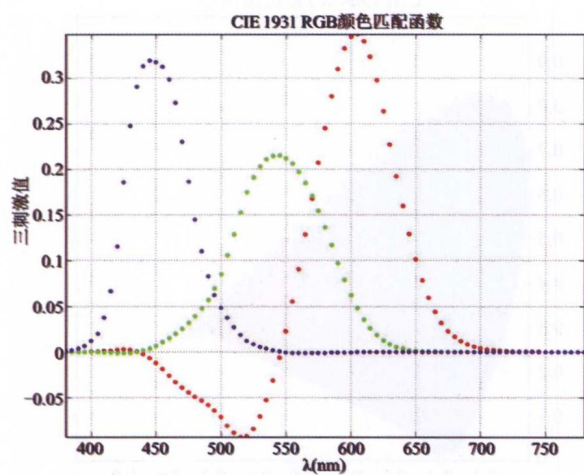
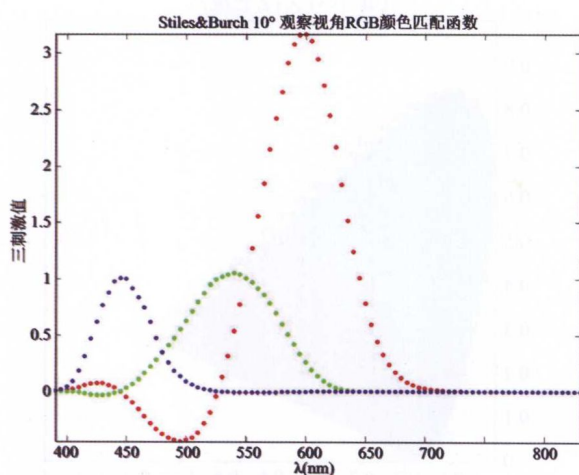


图 7-11



(a)



(b)

图 7-13

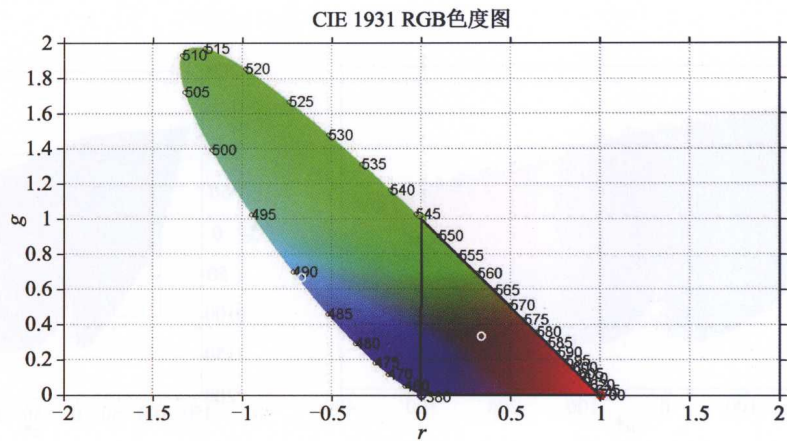
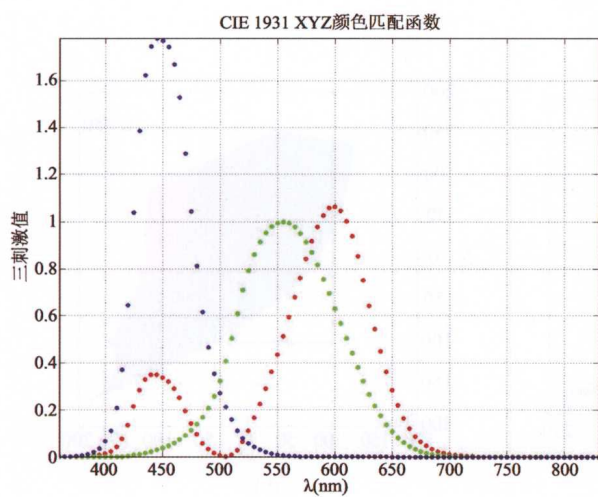
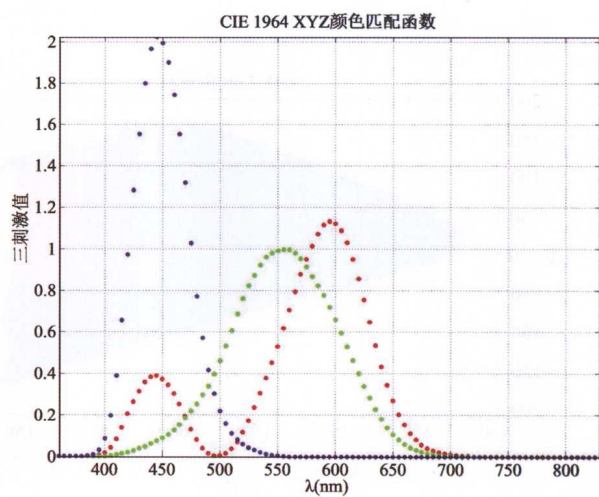


图 7-14



(a)



(b)

图 7-15

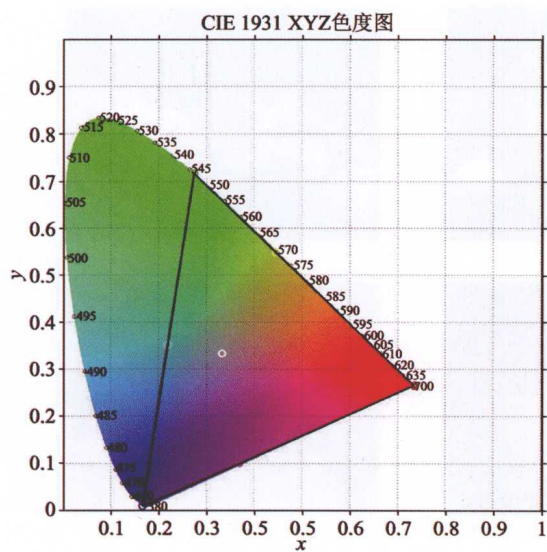


图 7-16

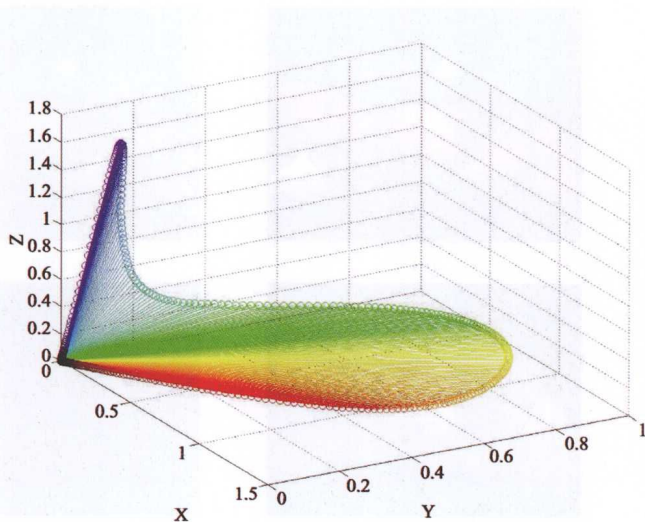
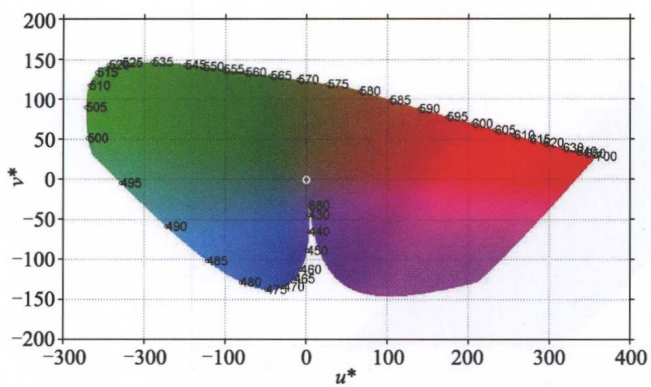
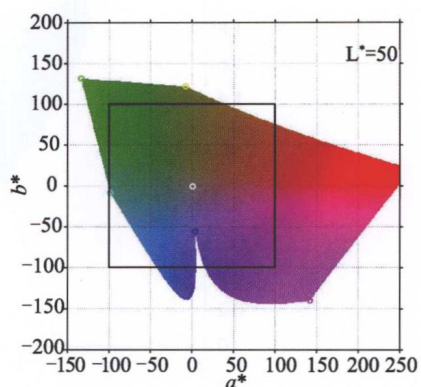


图 7-17

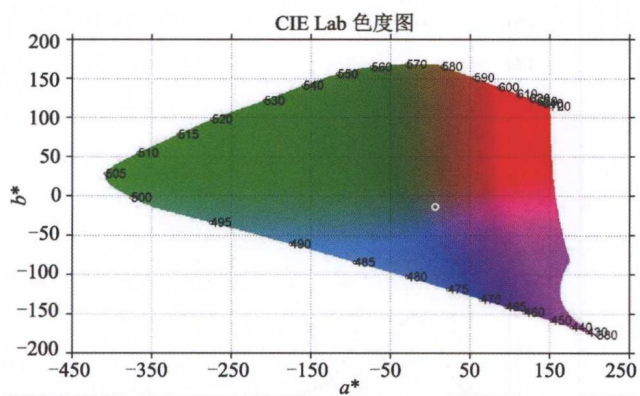


(a)

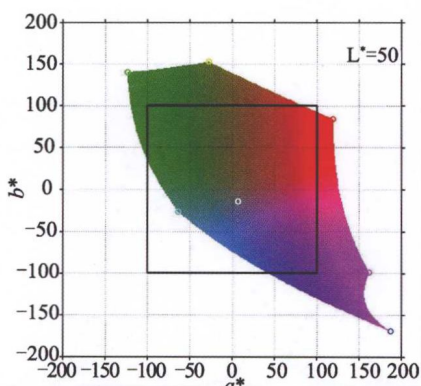


(b)

图 7-18



(a)



(b)

图 7-19



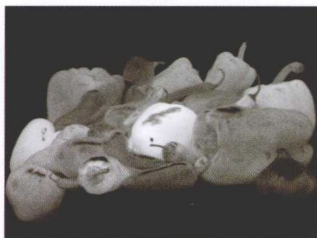
(a)



(b)



(c)



(d)



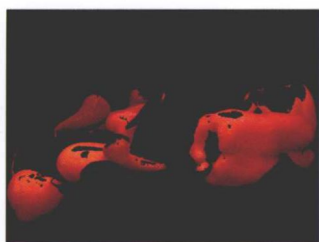
(e)



(f)



(g)



(h)



(i)

图 7-20

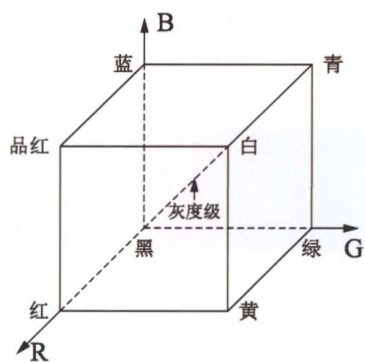
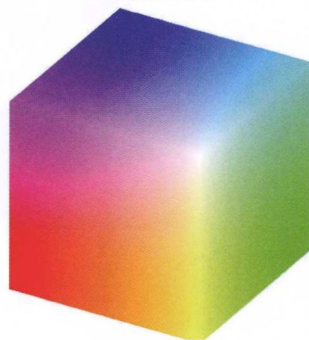
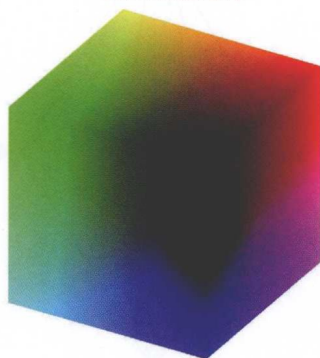


图 7-21

RGB 颜色空间



CMY 颜色空间



CMY 颜色空间

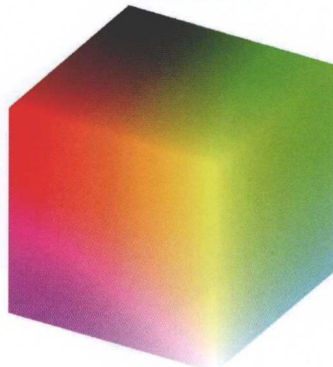


图 7-23

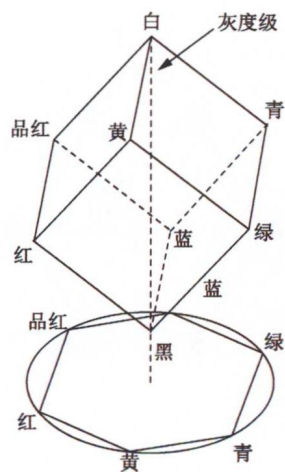
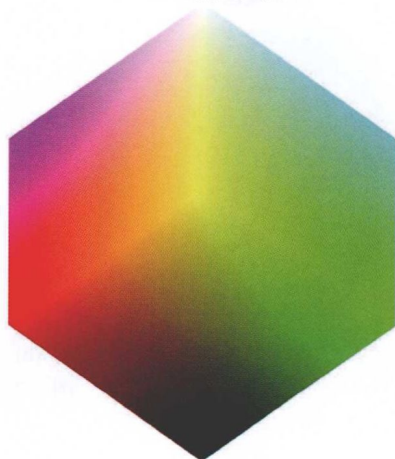


图 7-24

RGB 颜色空间



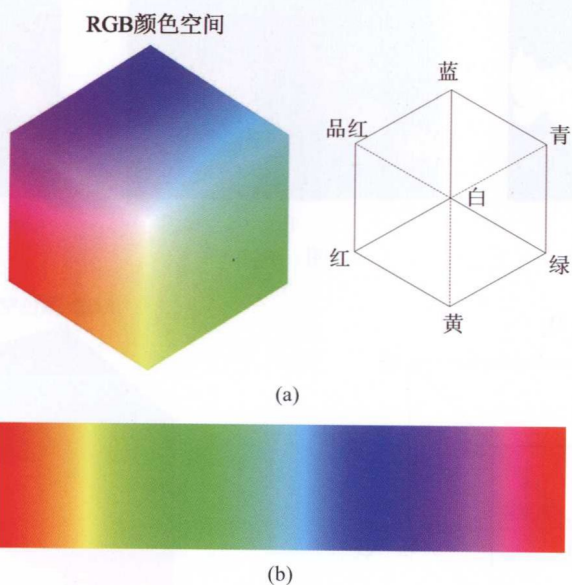


图 7-25

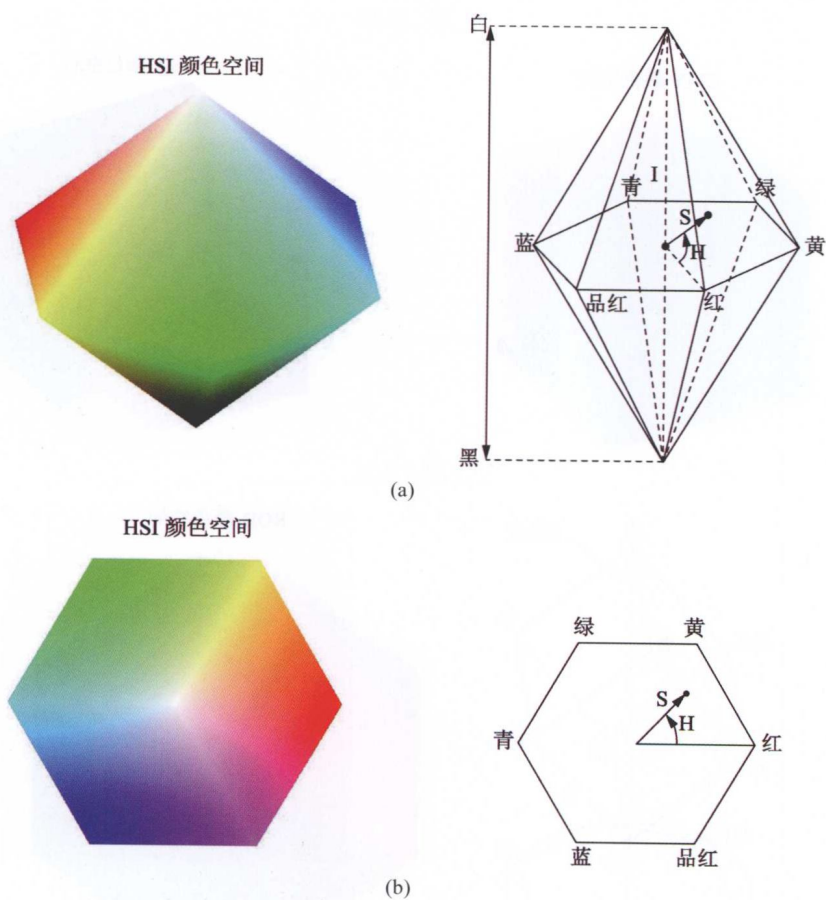


图 7-27

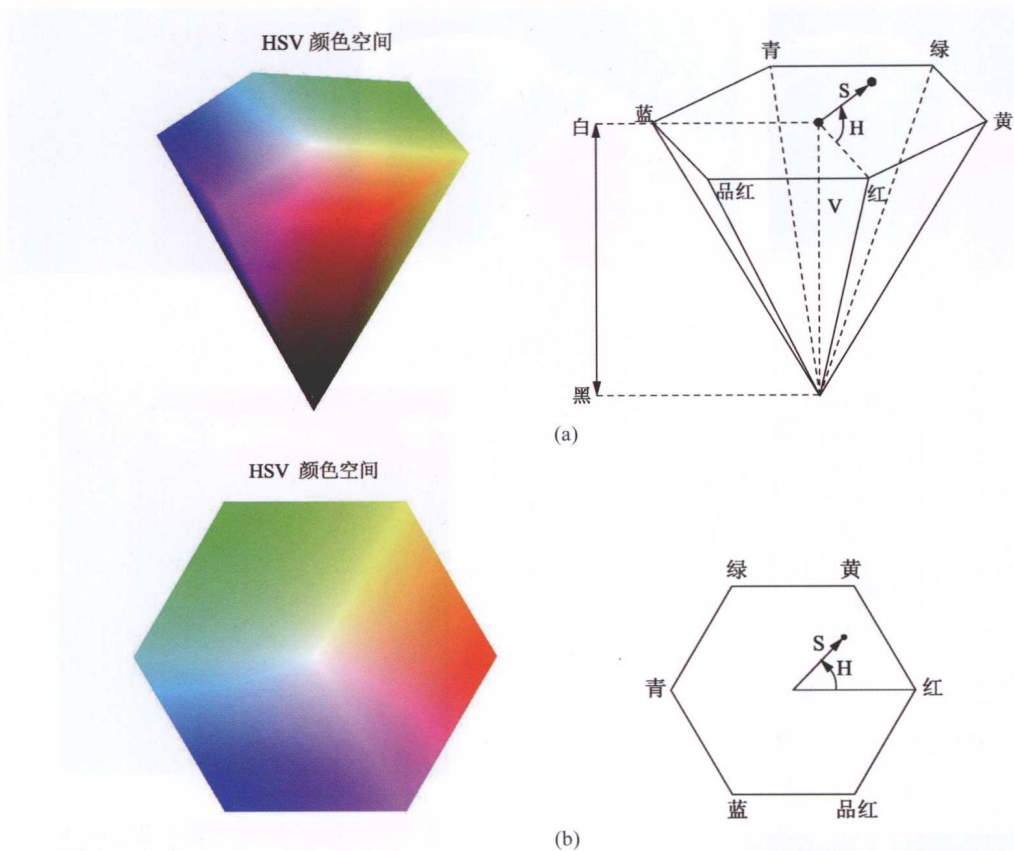


图 7-28



(a)



(b)



(c)

图 7-30



(a)

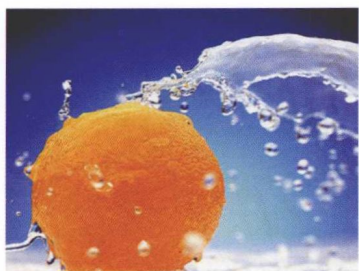


(b)



(c)

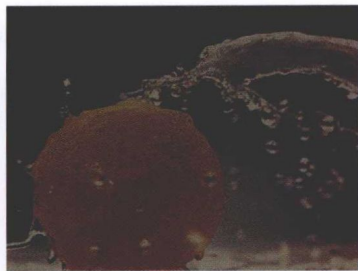
图 7-31



(a)



(b)



(c)

图 7-32

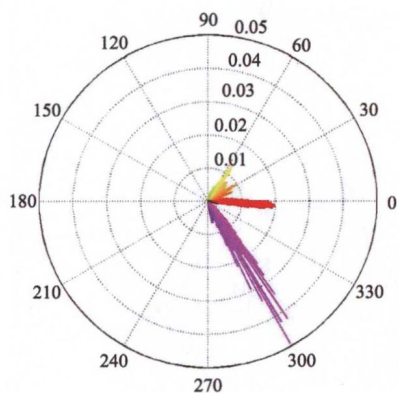
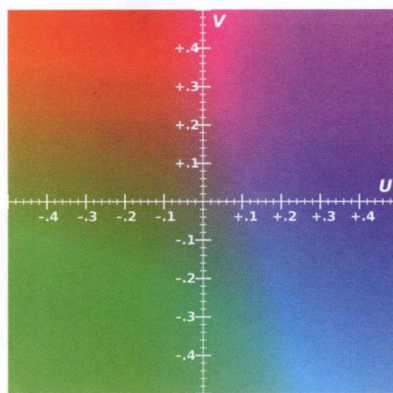


图 7-33



(a)

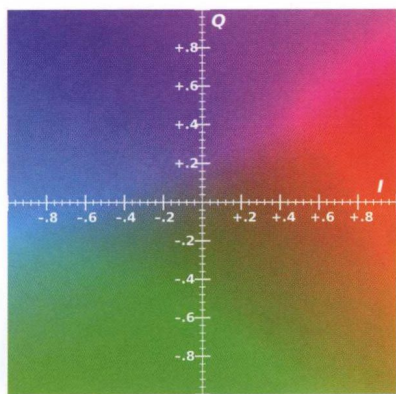
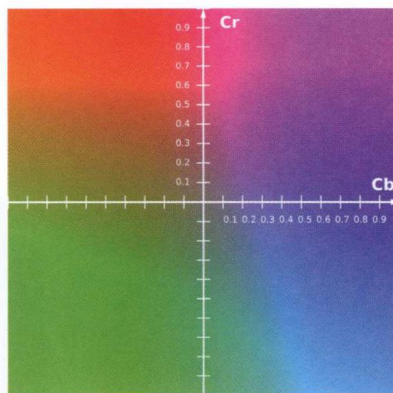


图 7-35



(b)

图 7-34



Jet



Pink



Copper



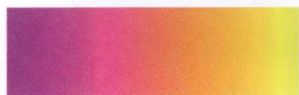
Bone



Cool



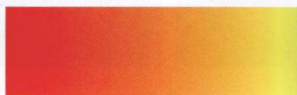
Hot



Spring



Summer



Autumn



Winter

图 7-40

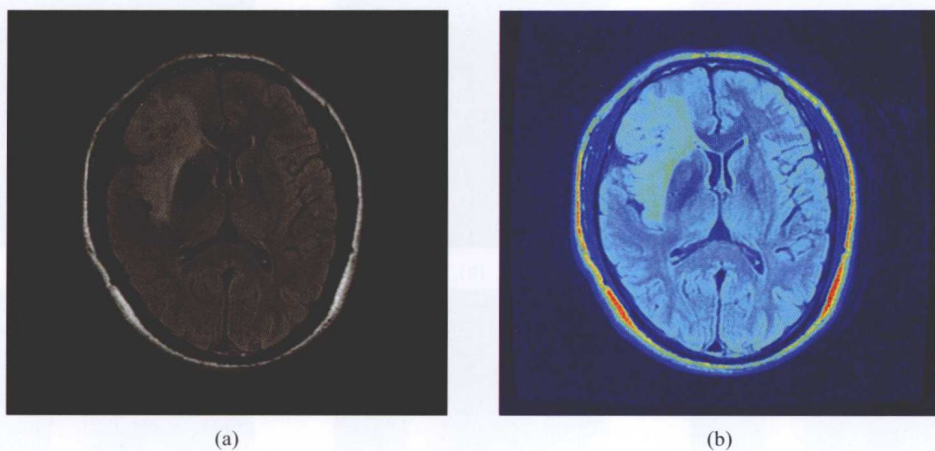


图 7-42

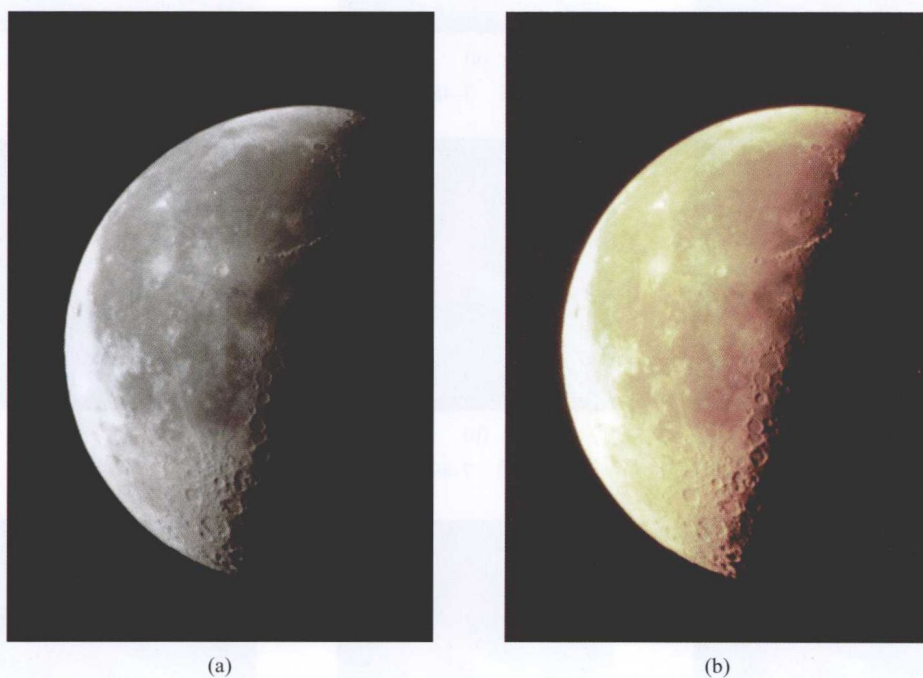


图 7-44

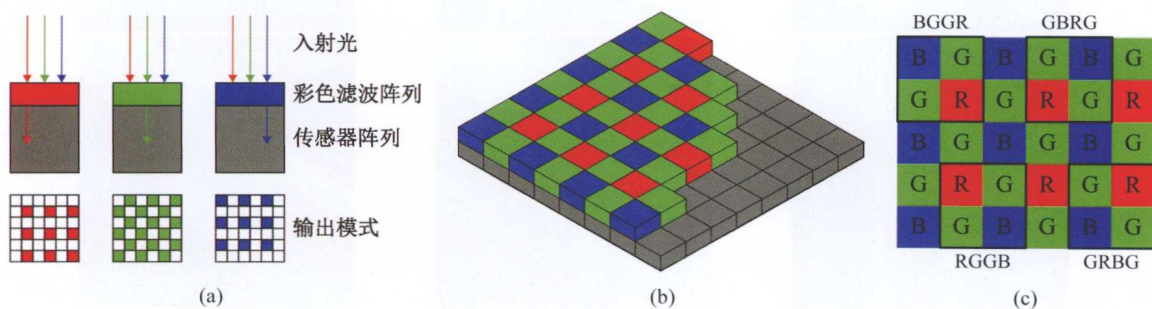
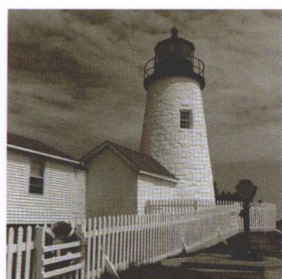
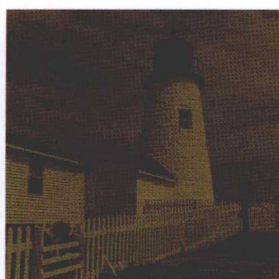


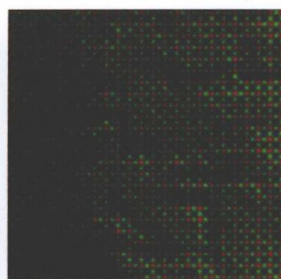
图 7-46



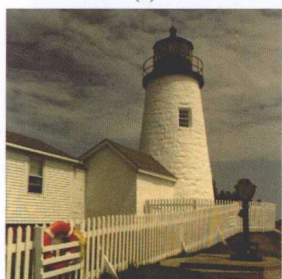
(a)



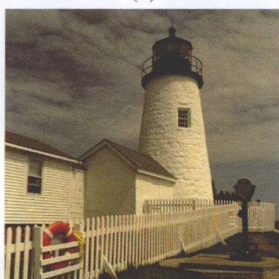
(b)



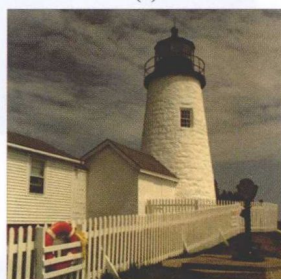
(c)



(d)



(e)



(f)

图 7-48



(a)

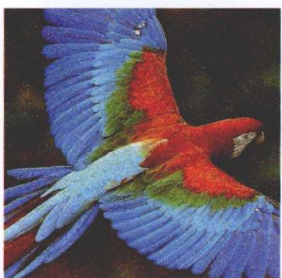


(b)



(c)

图 7-49



(a)



(b)



(c)

图 7-52



(a)



(b)



(c)

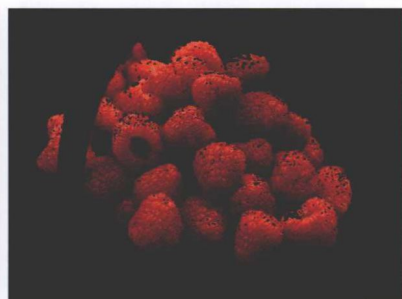
图 7-53



(a)

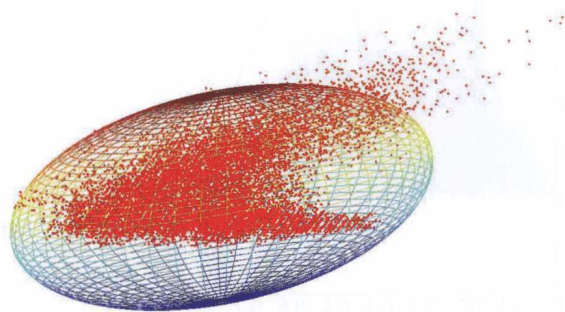


(b)

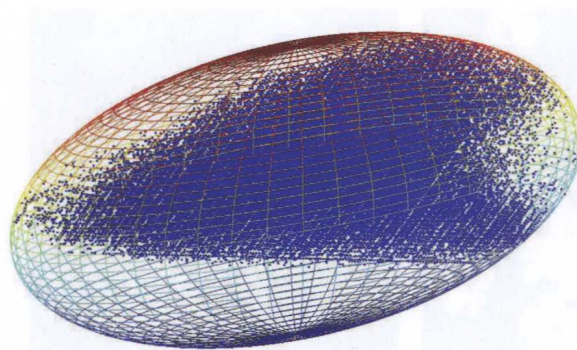
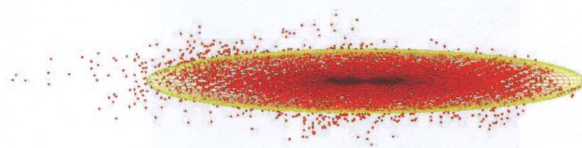


(c)

图 7-55



(a)



(b)

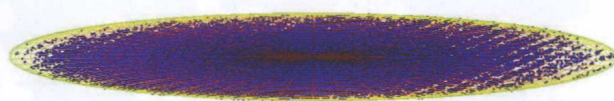


图 7-56



(a)



(b)



(c)



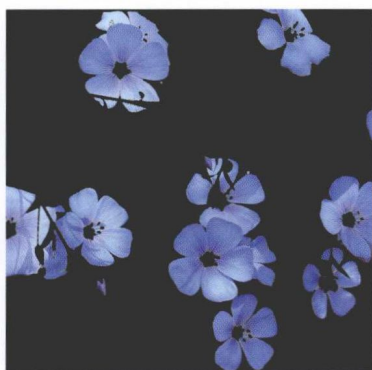
(d)



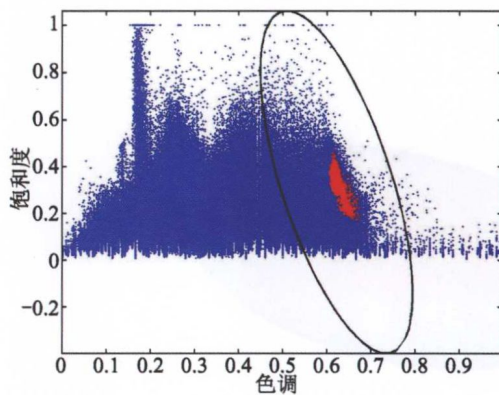
(e)



(f)



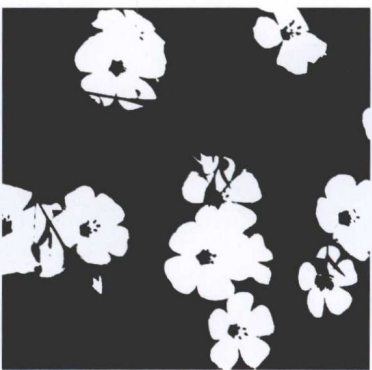
(g)



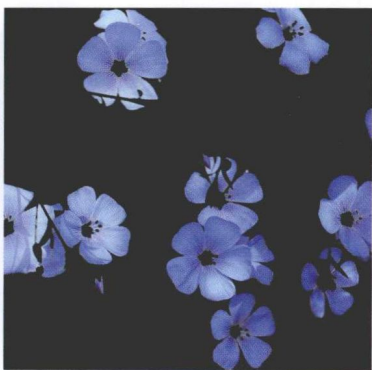
(h)



(i)



(j)



(k)

图 7-57