

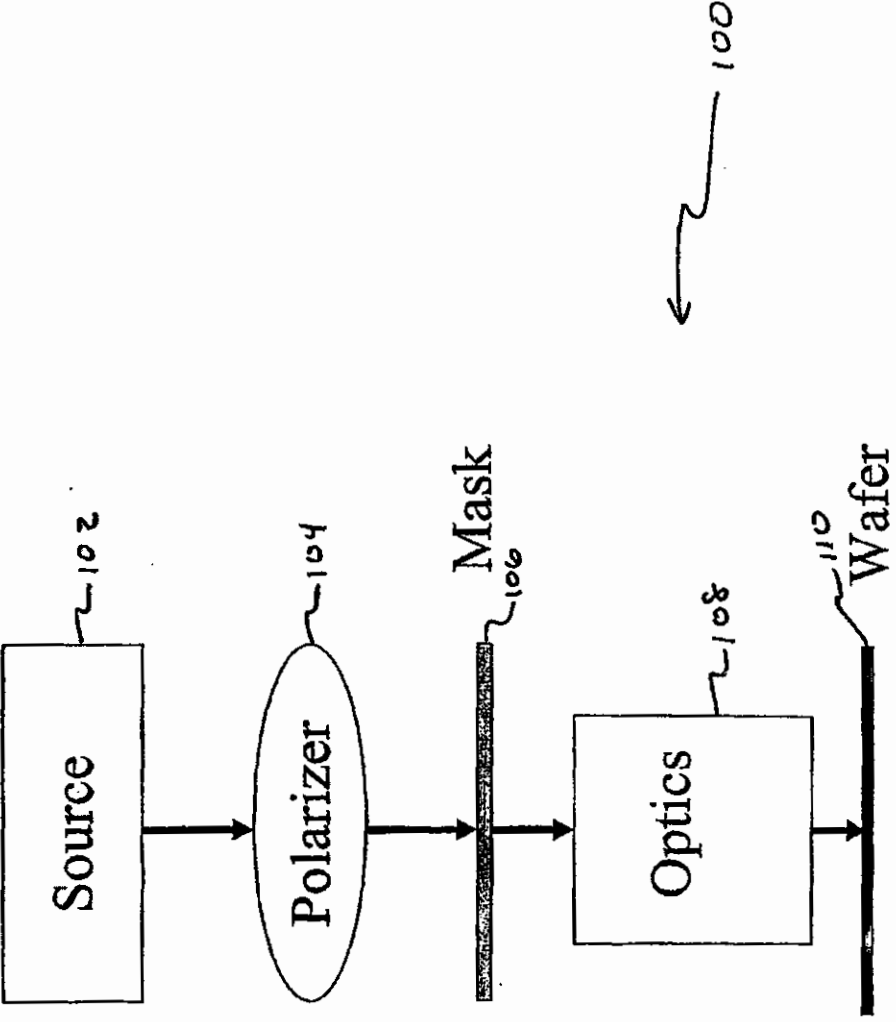


FIG. 1

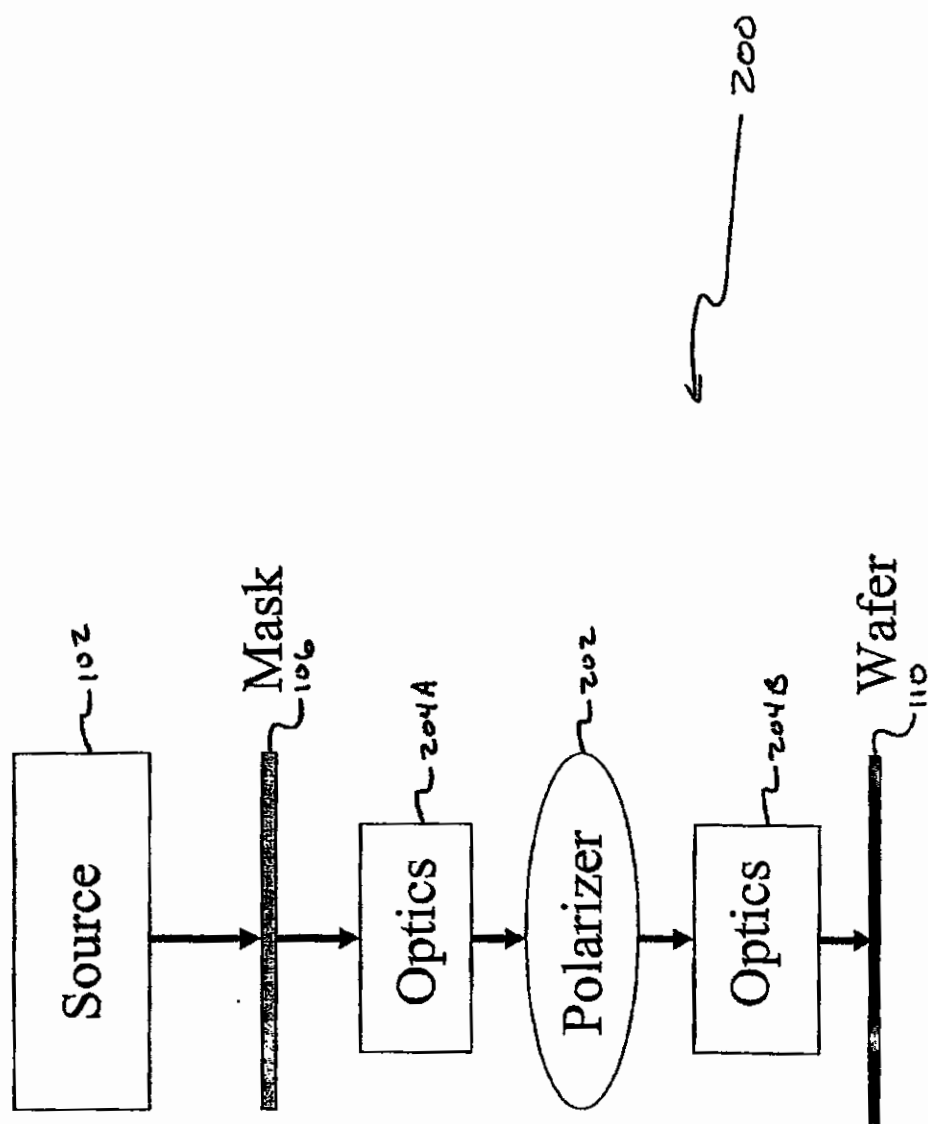


FIG. 2

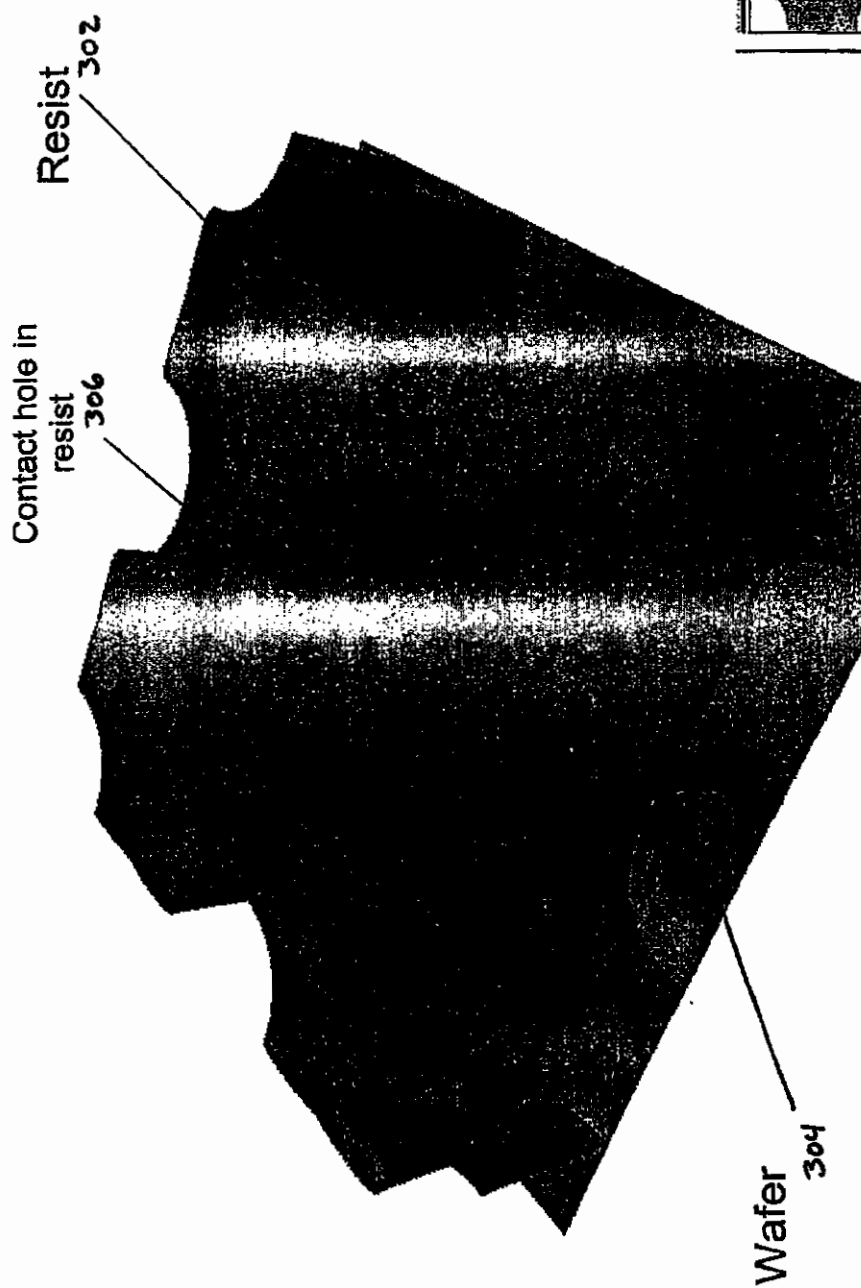


FIG. 3A

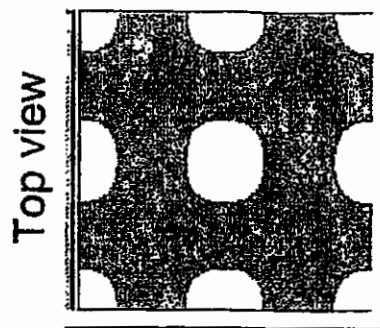


FIG. 3B

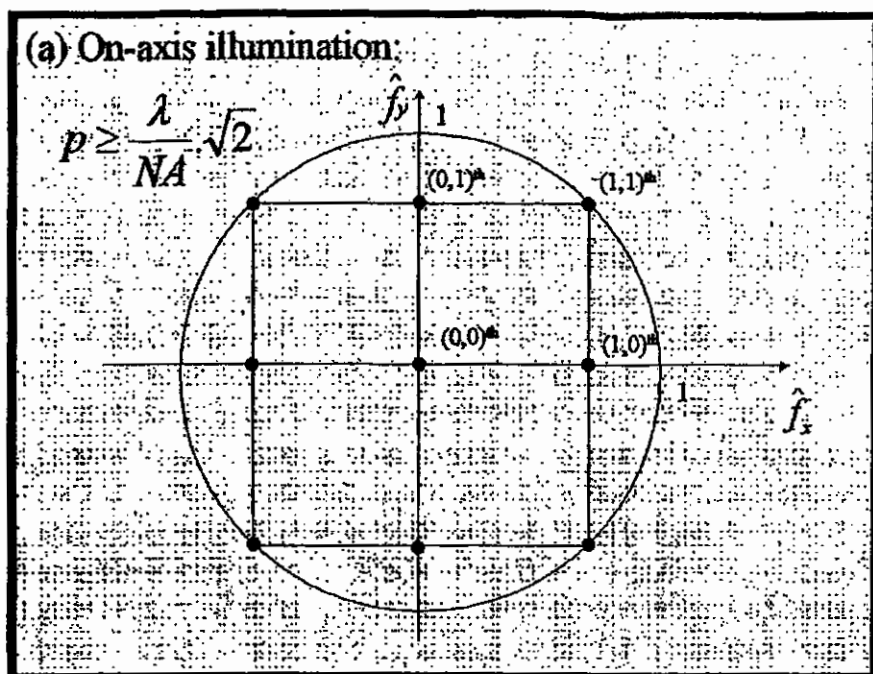


FIG. 4A

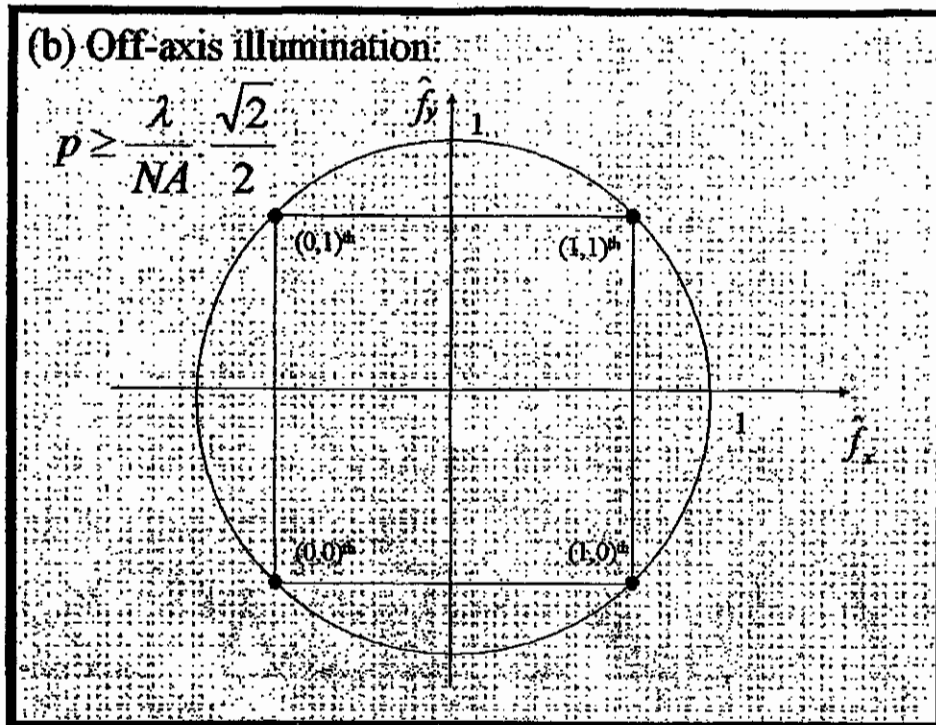


FIG. 4B

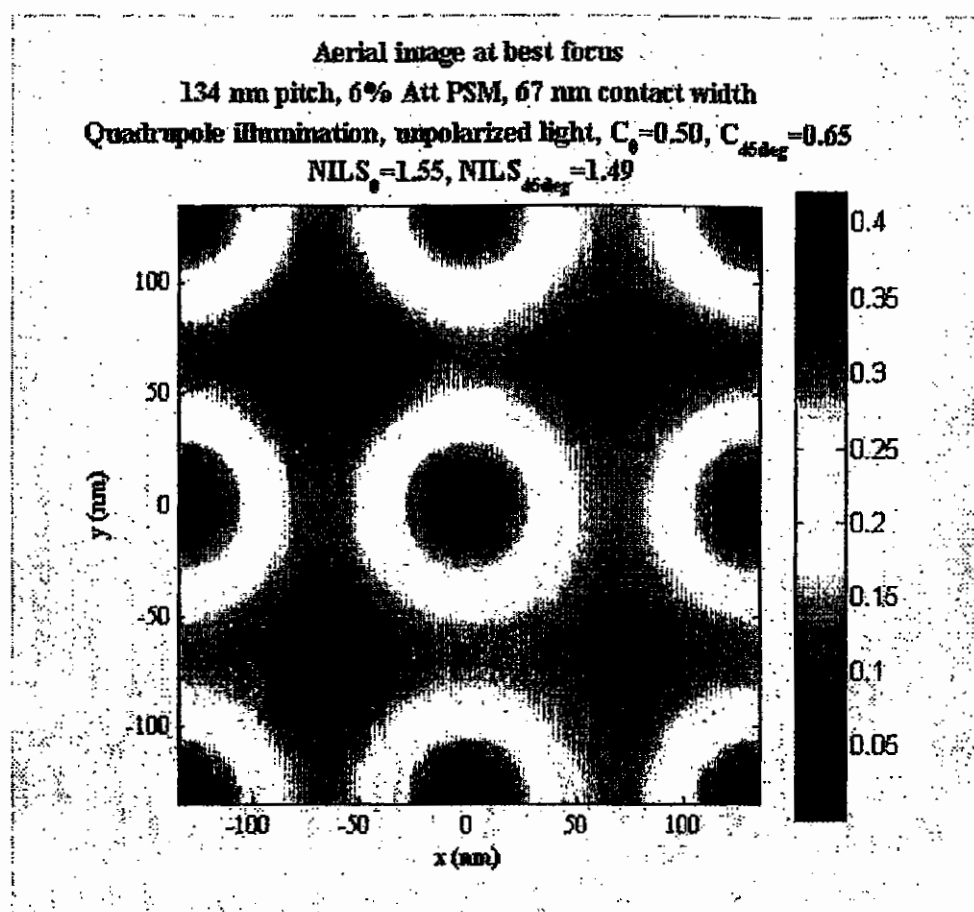


FIG. 5

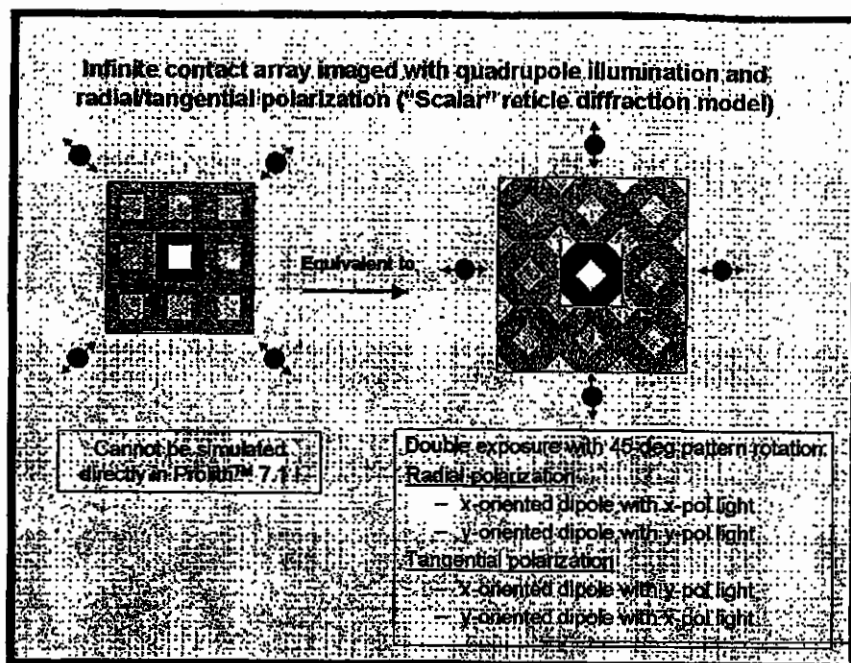


FIG. 6

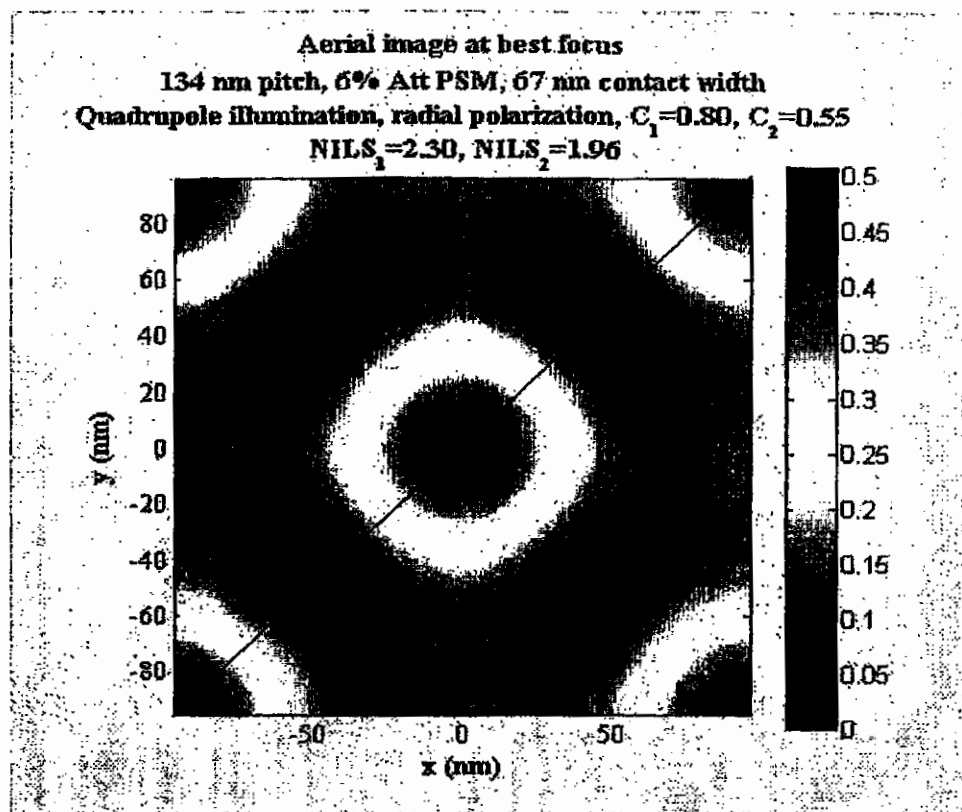


FIG. 7A

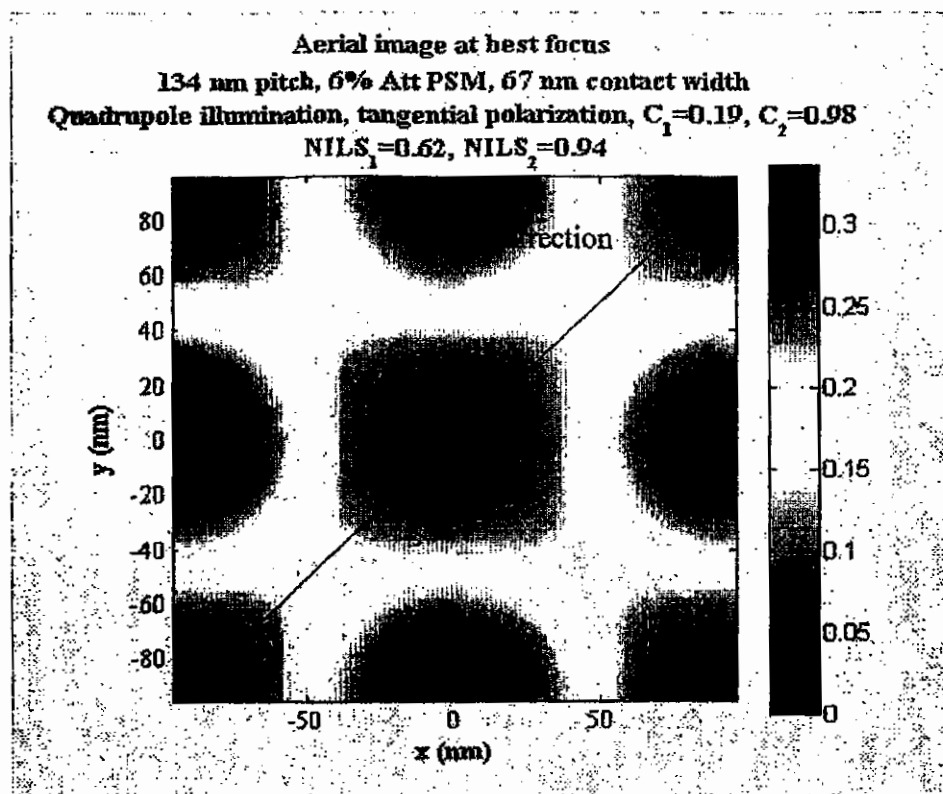


FIG. 7B

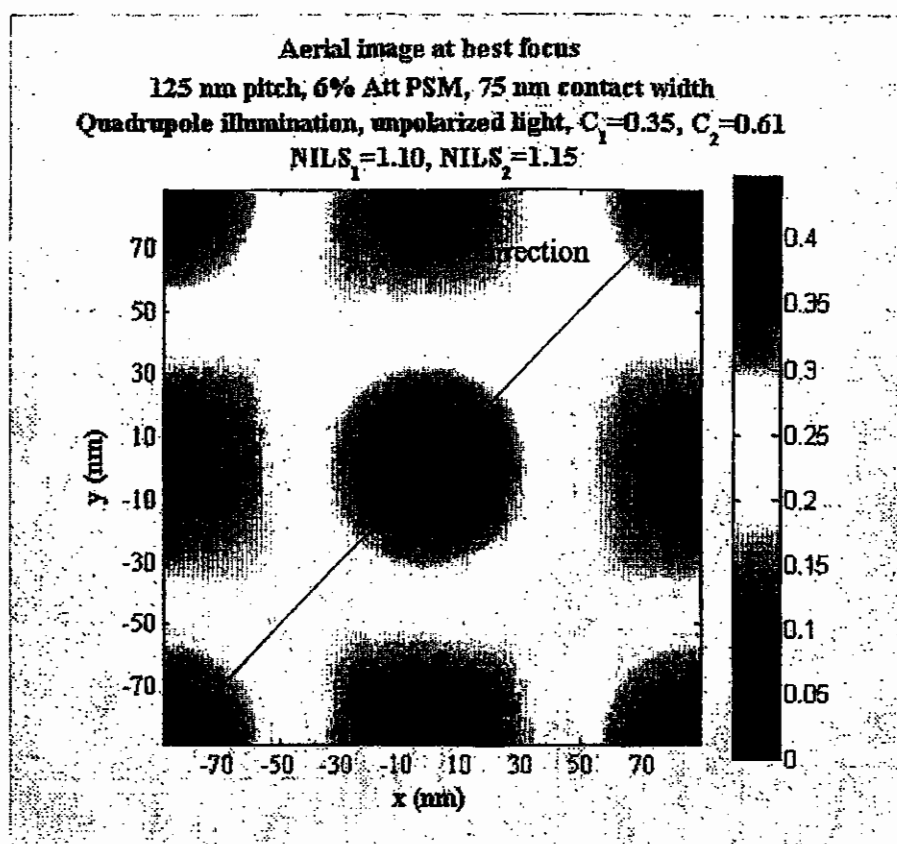


FIG. 8A

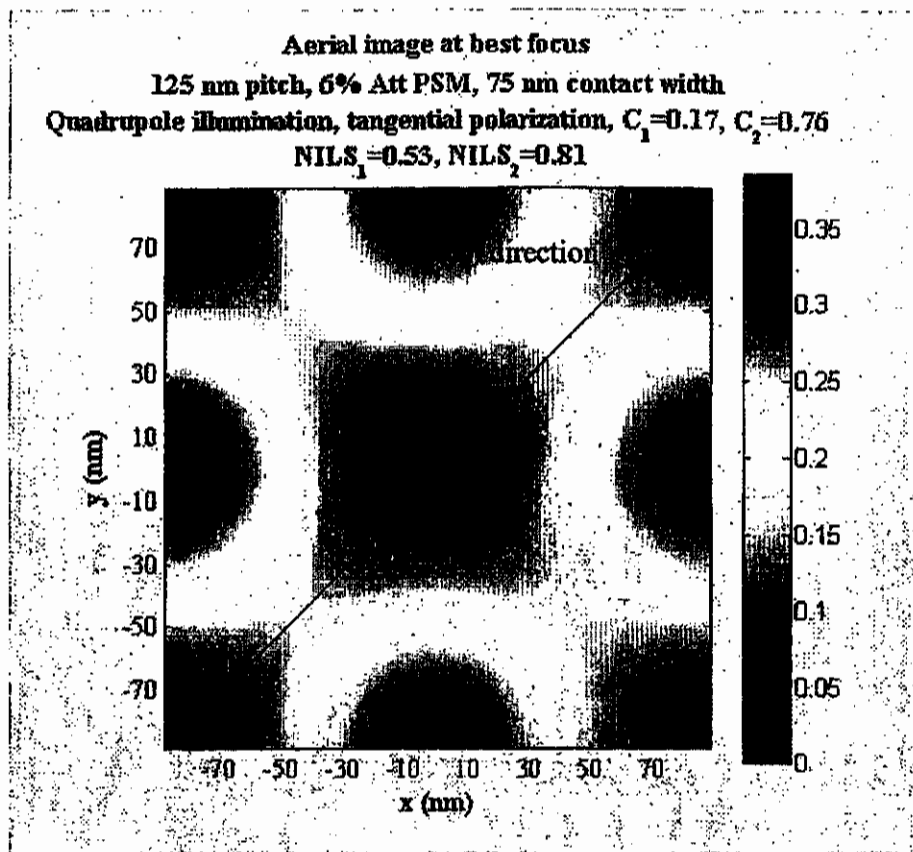


FIG. 8B

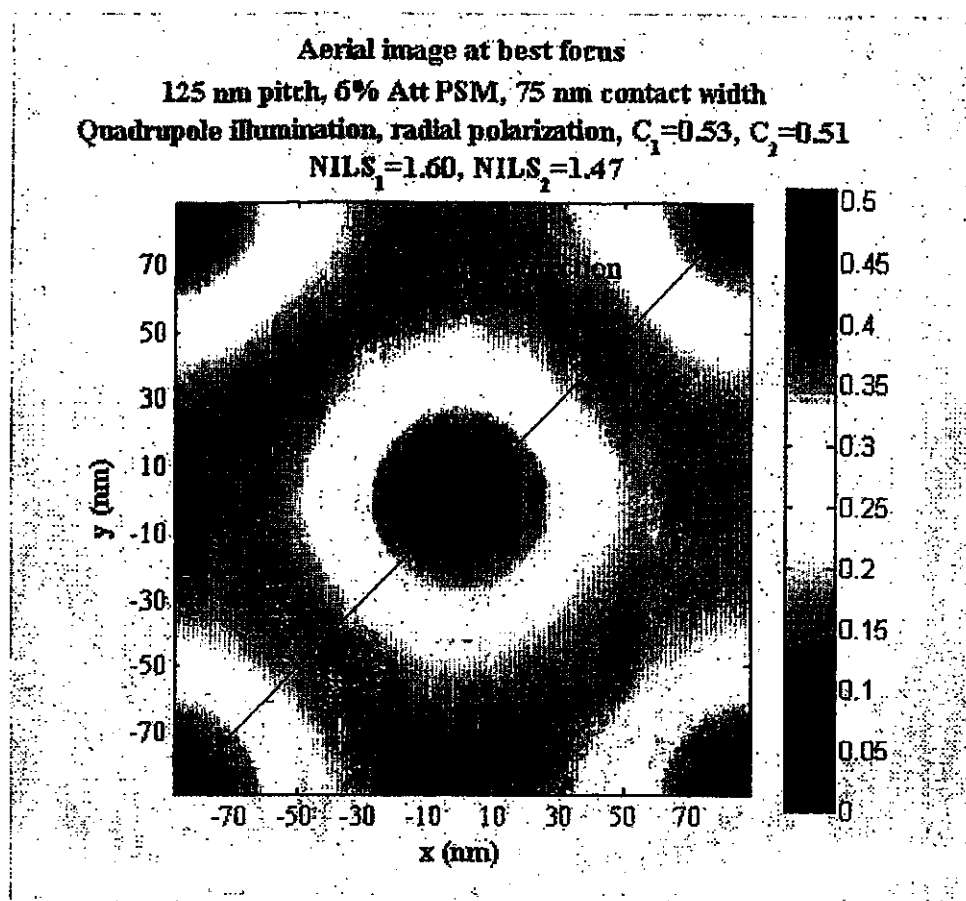


FIG. 8C

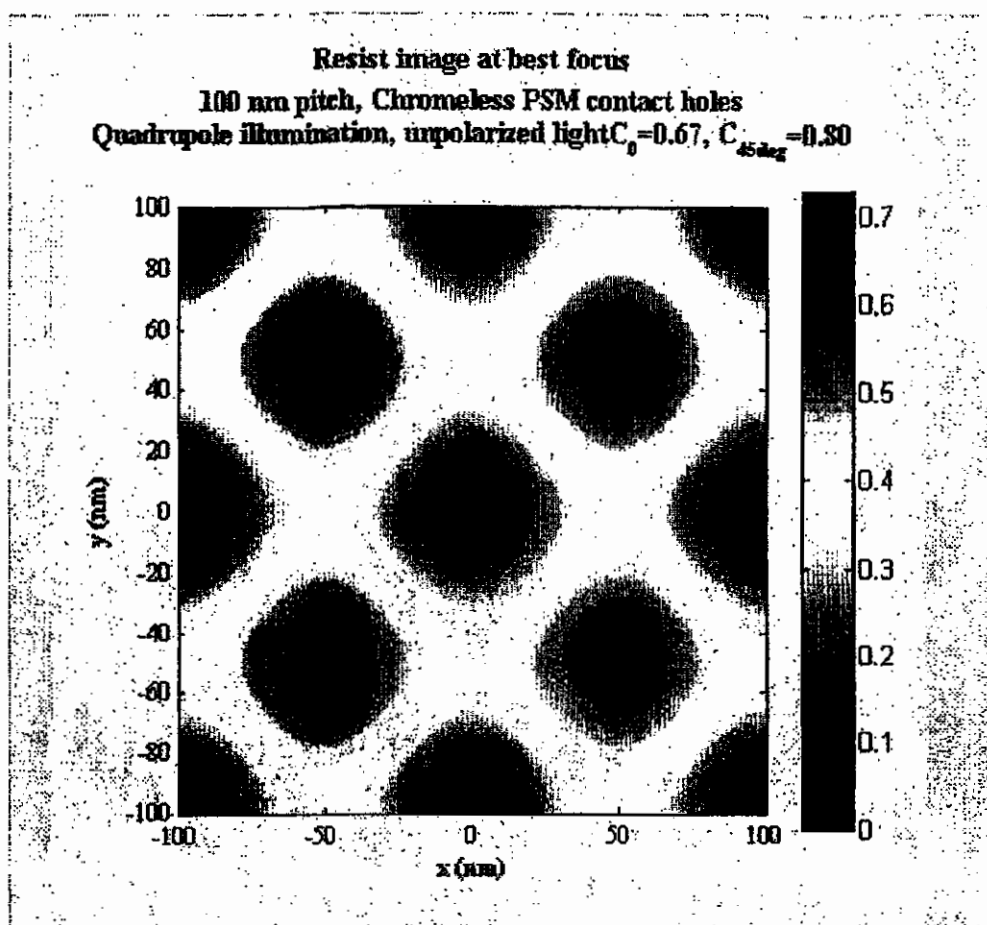


FIG. 9A

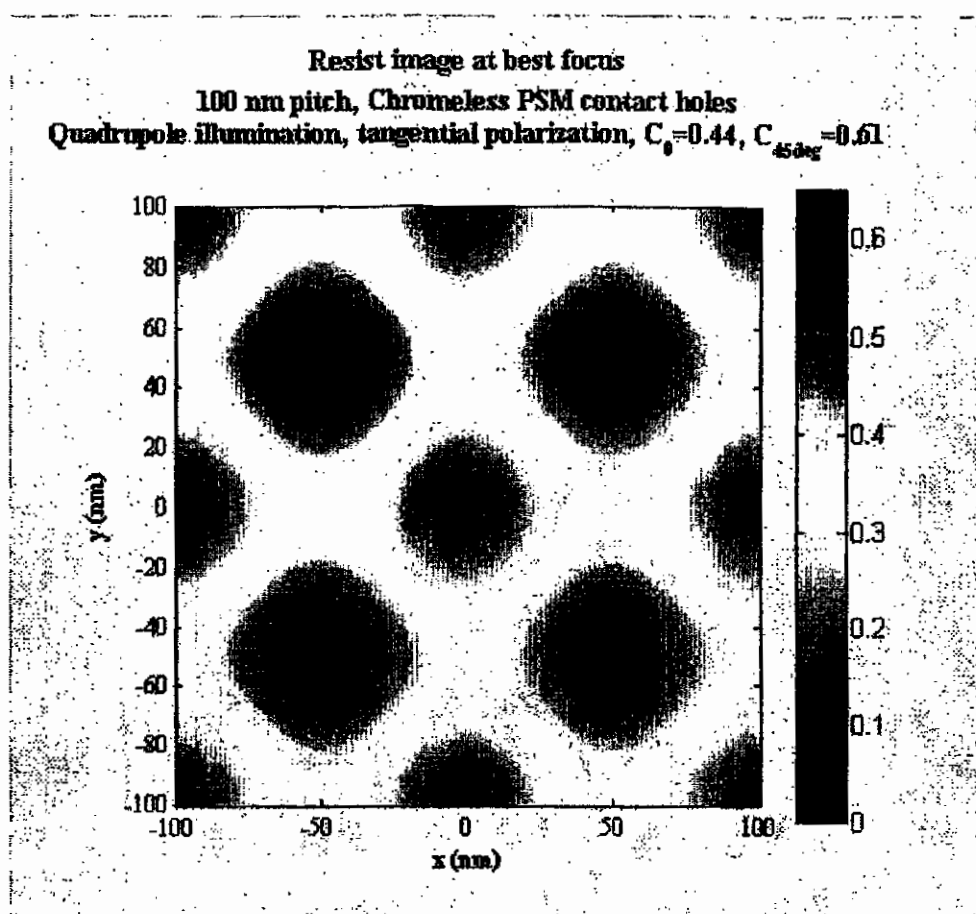


FIG. 9B

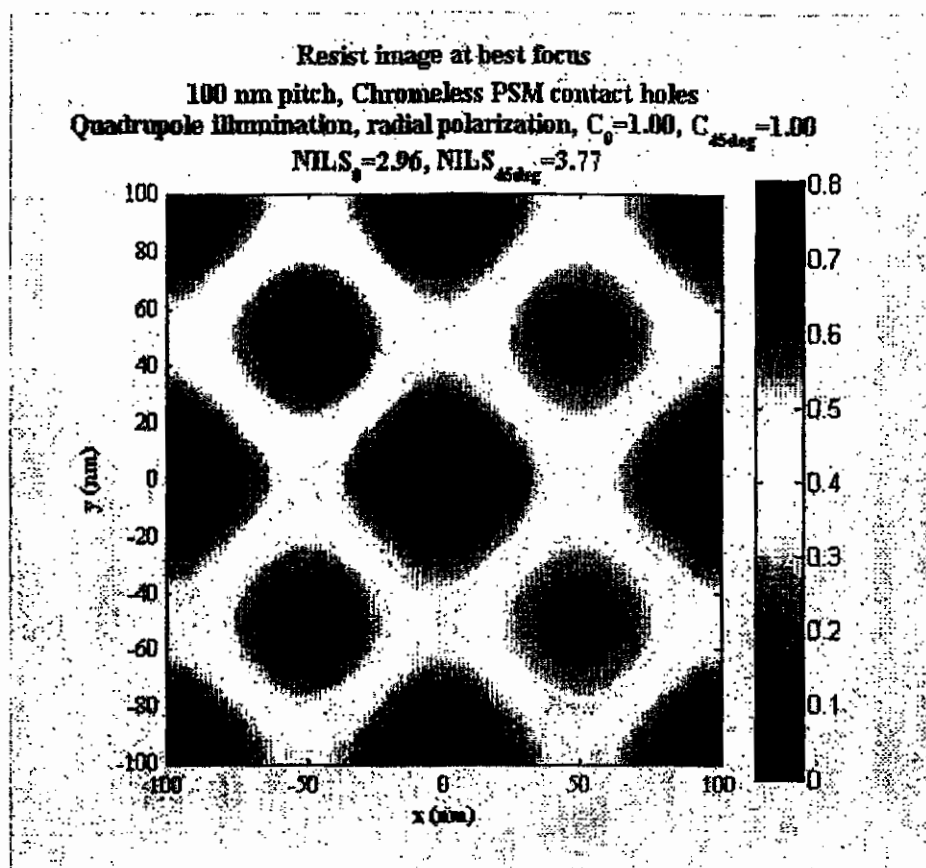


FIG. 9C

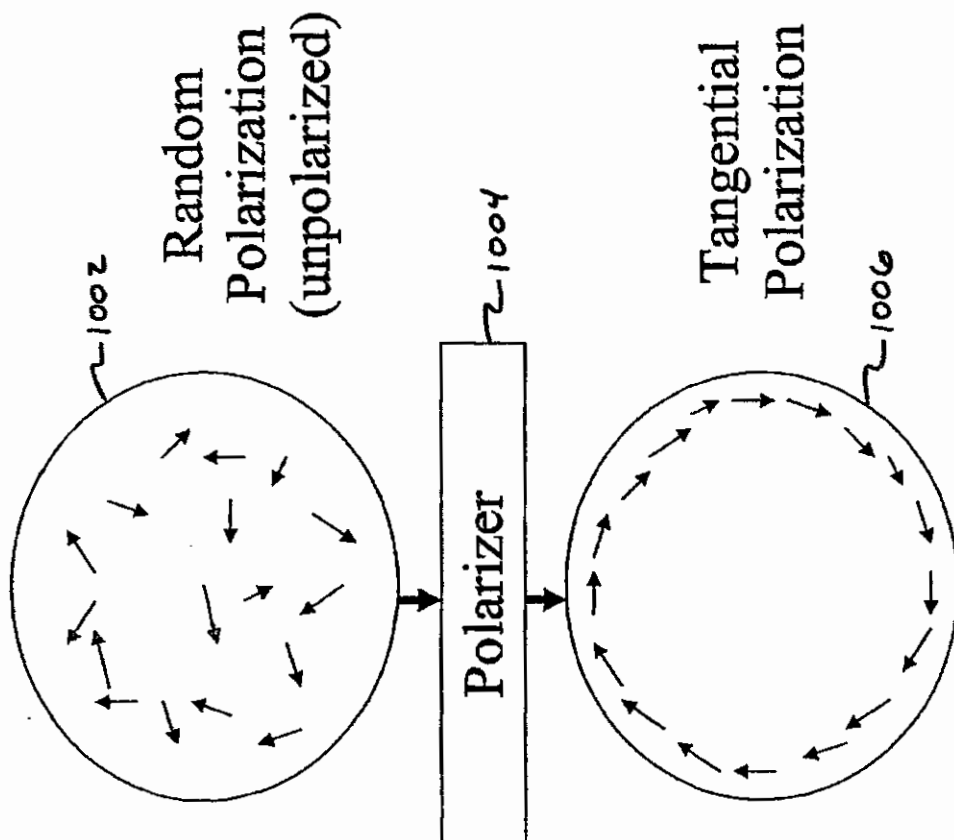


FIG. 10A

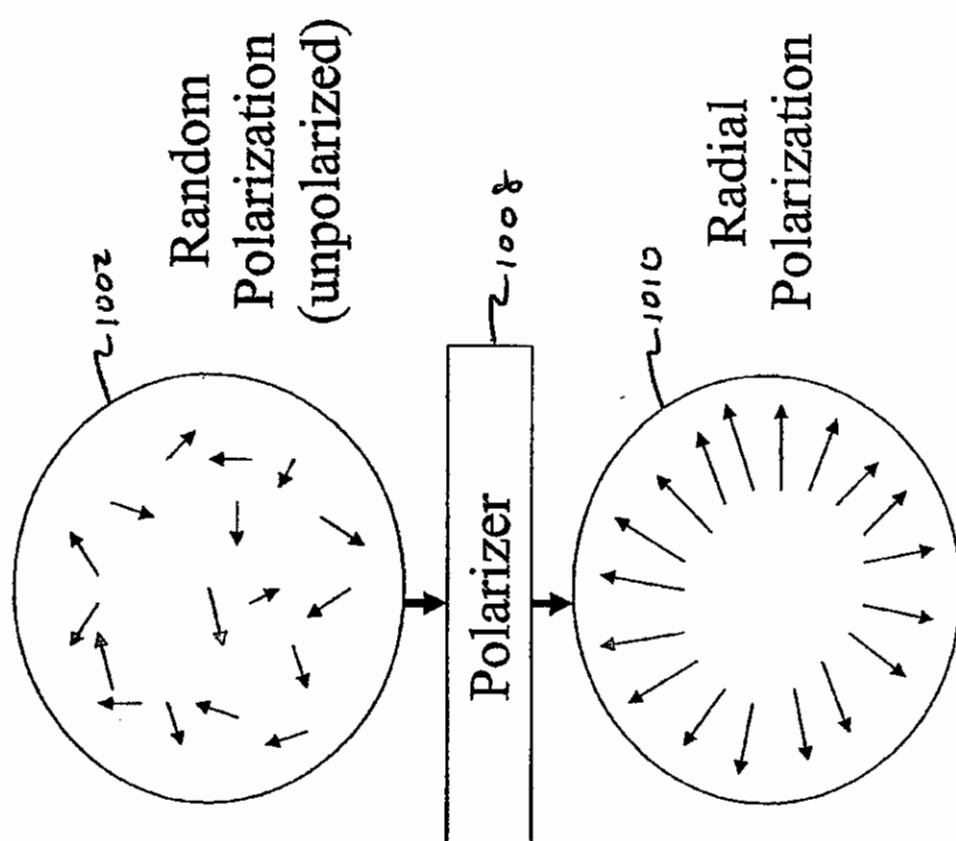


FIG. 10B

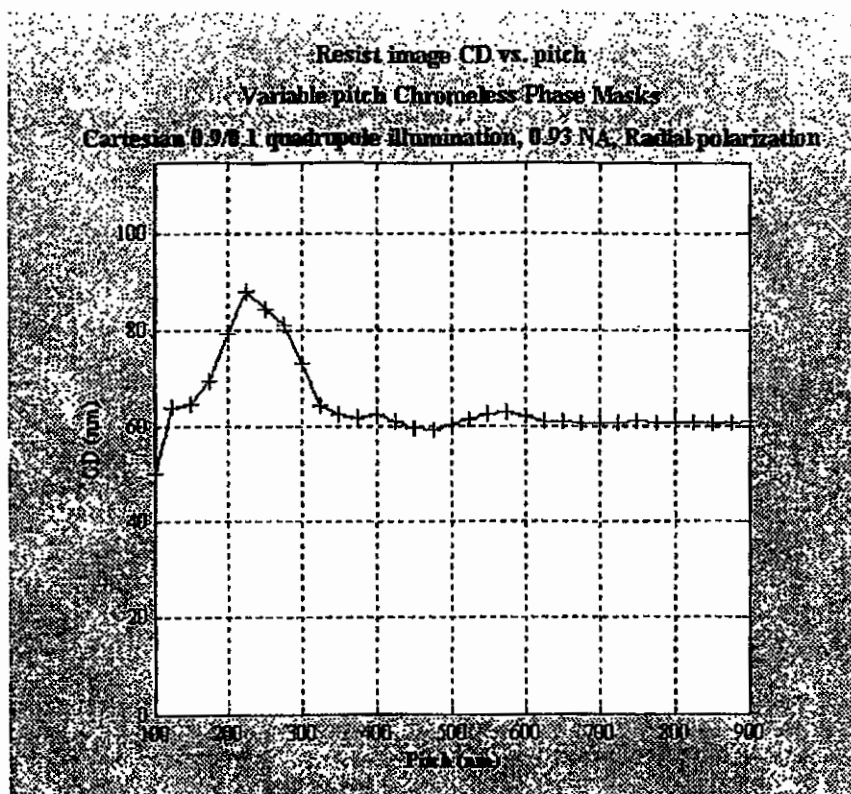


FIG. 11A

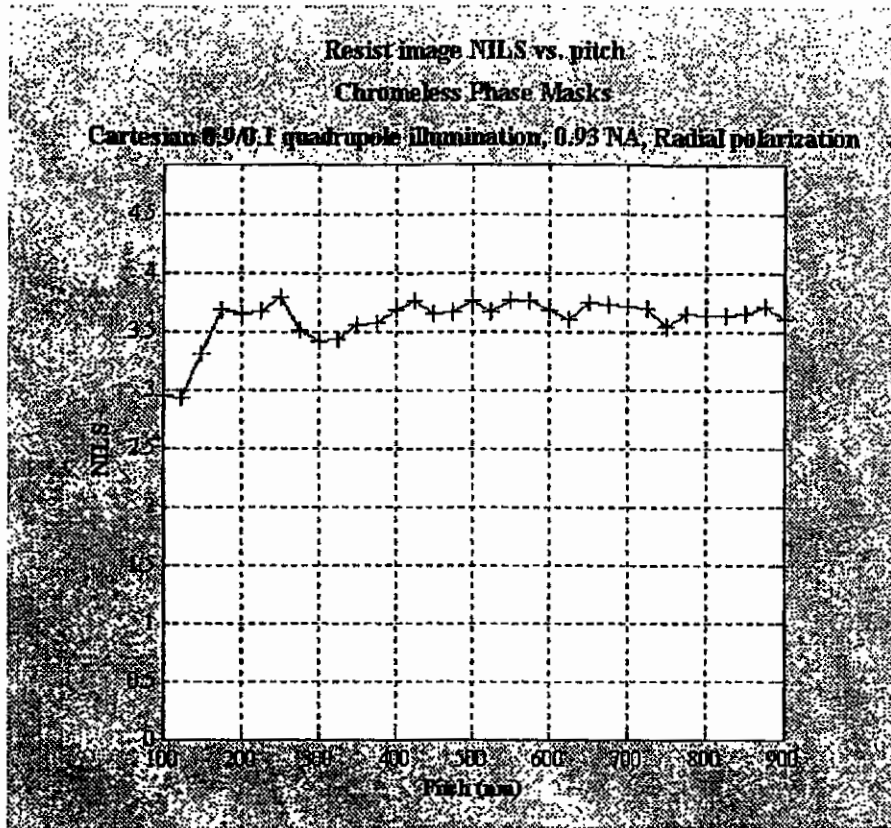


FIG. 11B

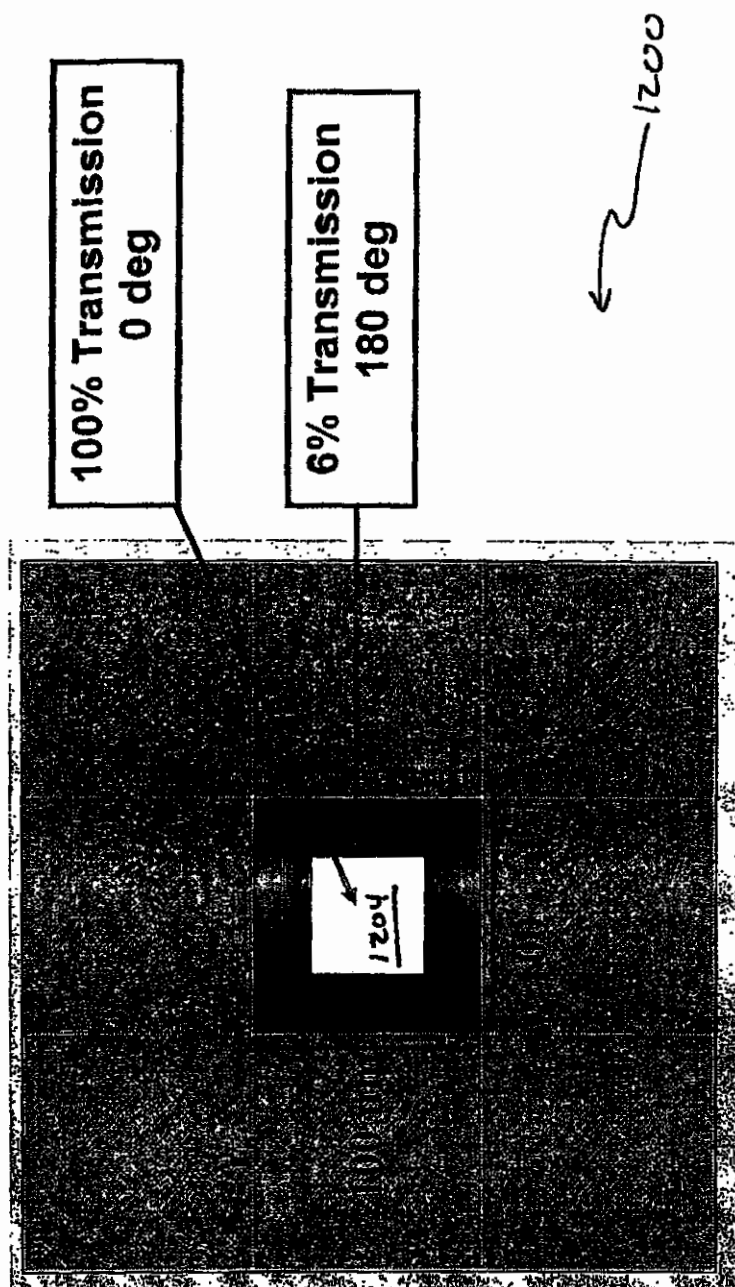


FIG. 12

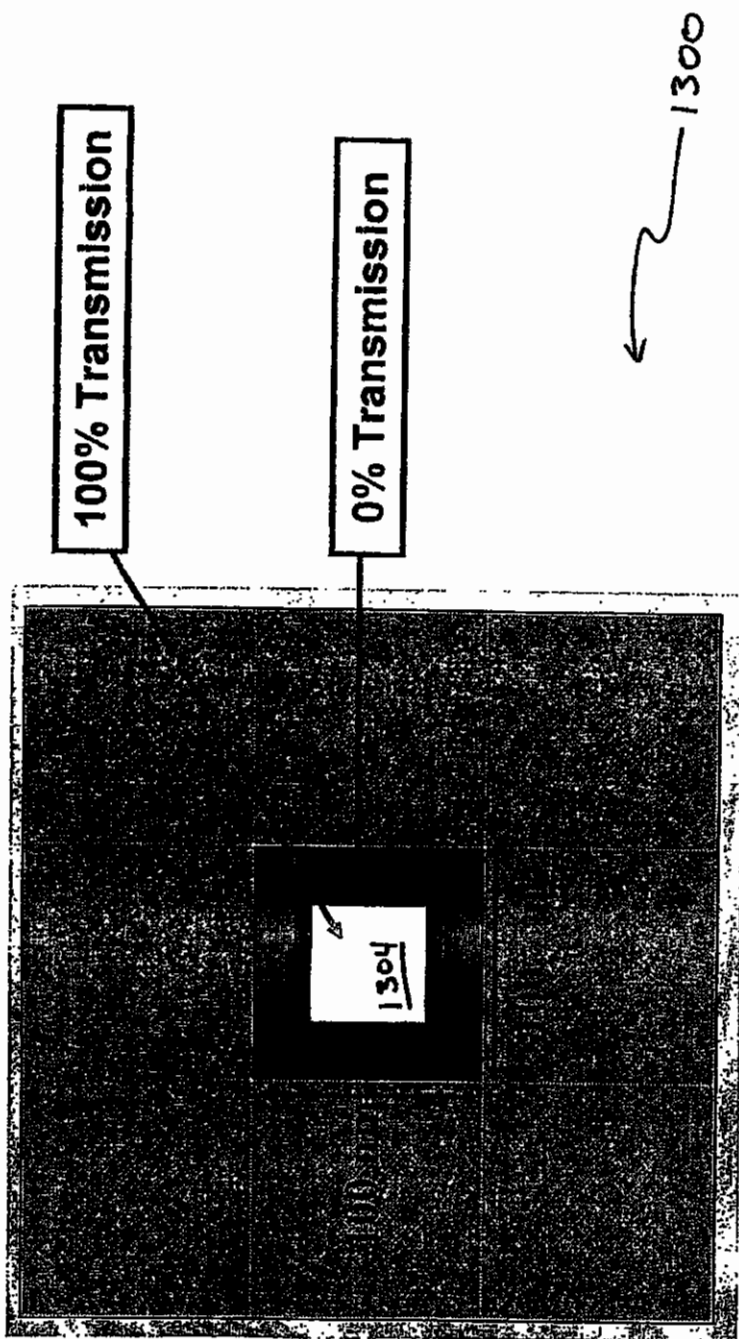


FIG. 13

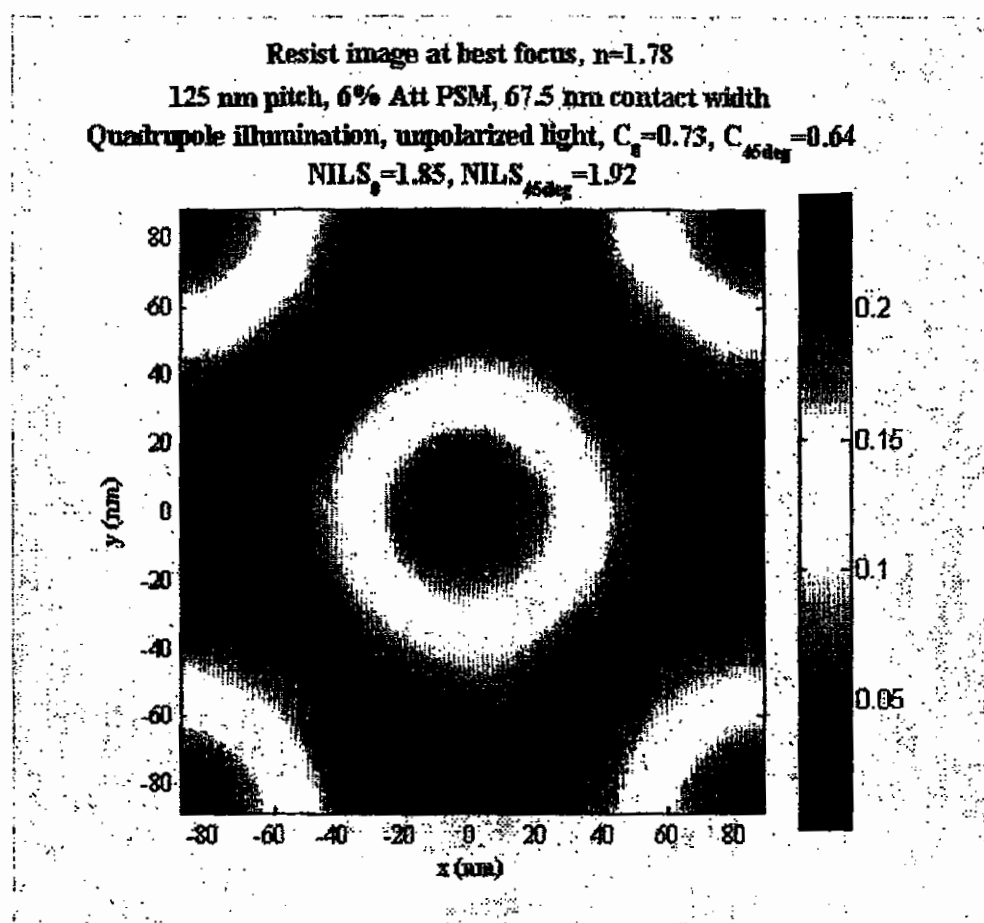


FIG. 14A

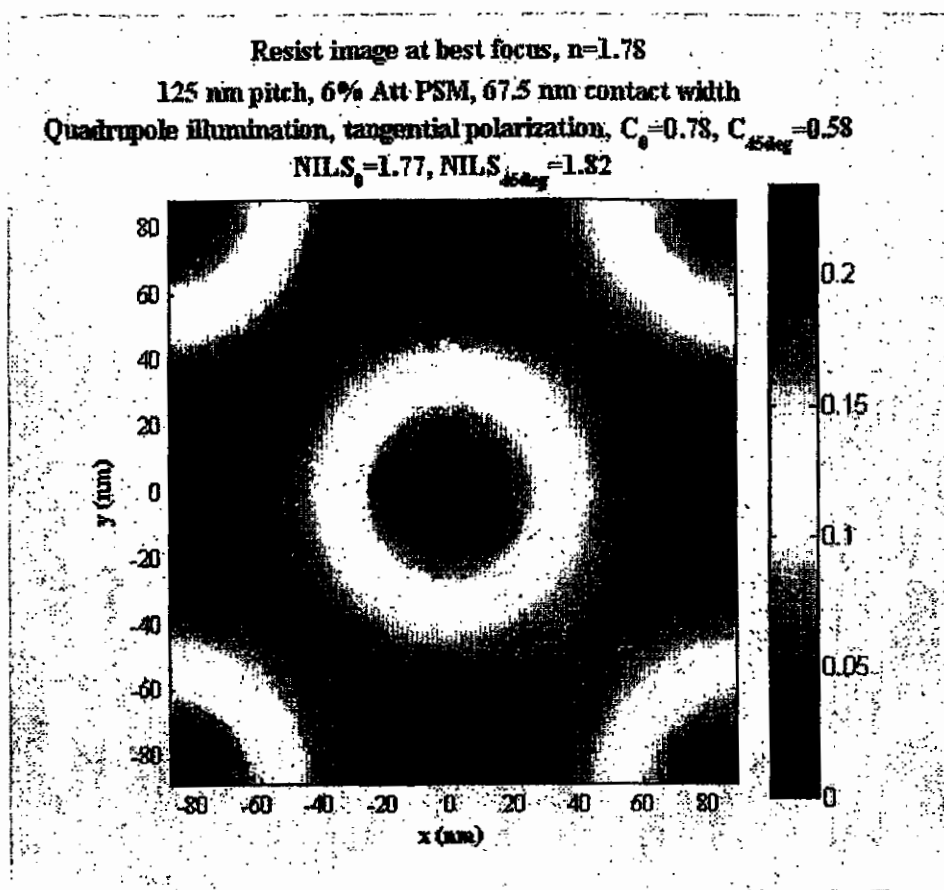


FIG. 14B

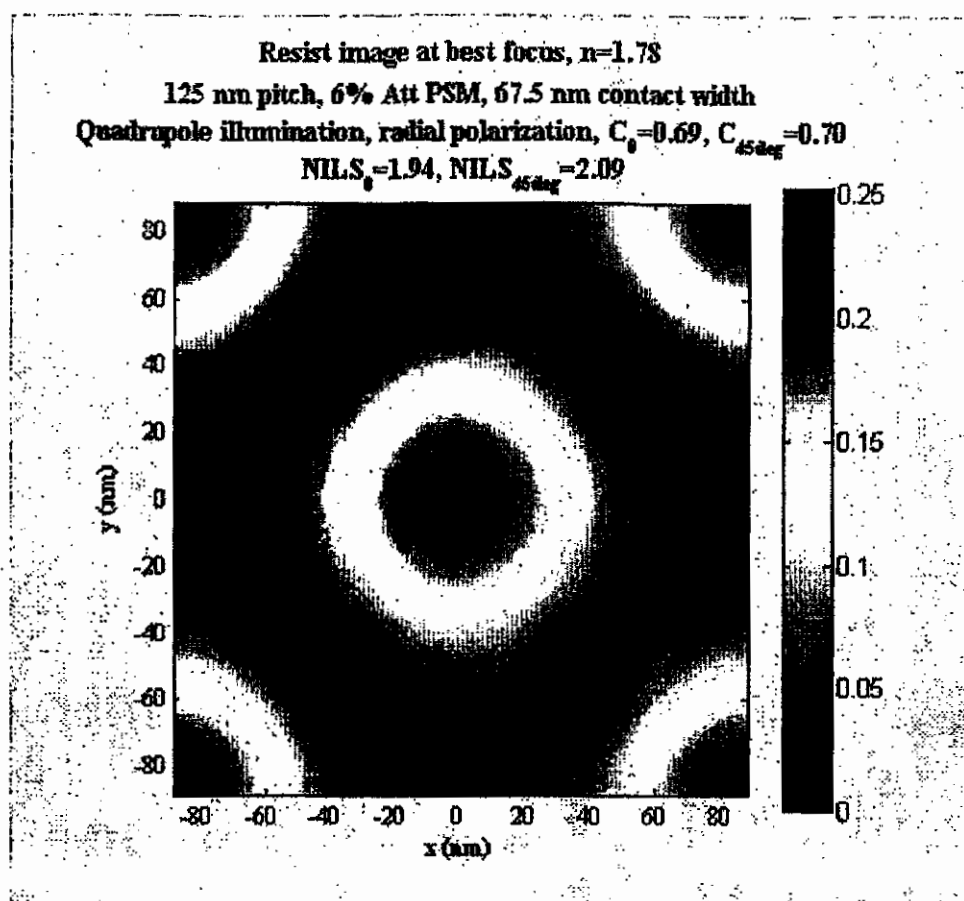


FIG. 14C

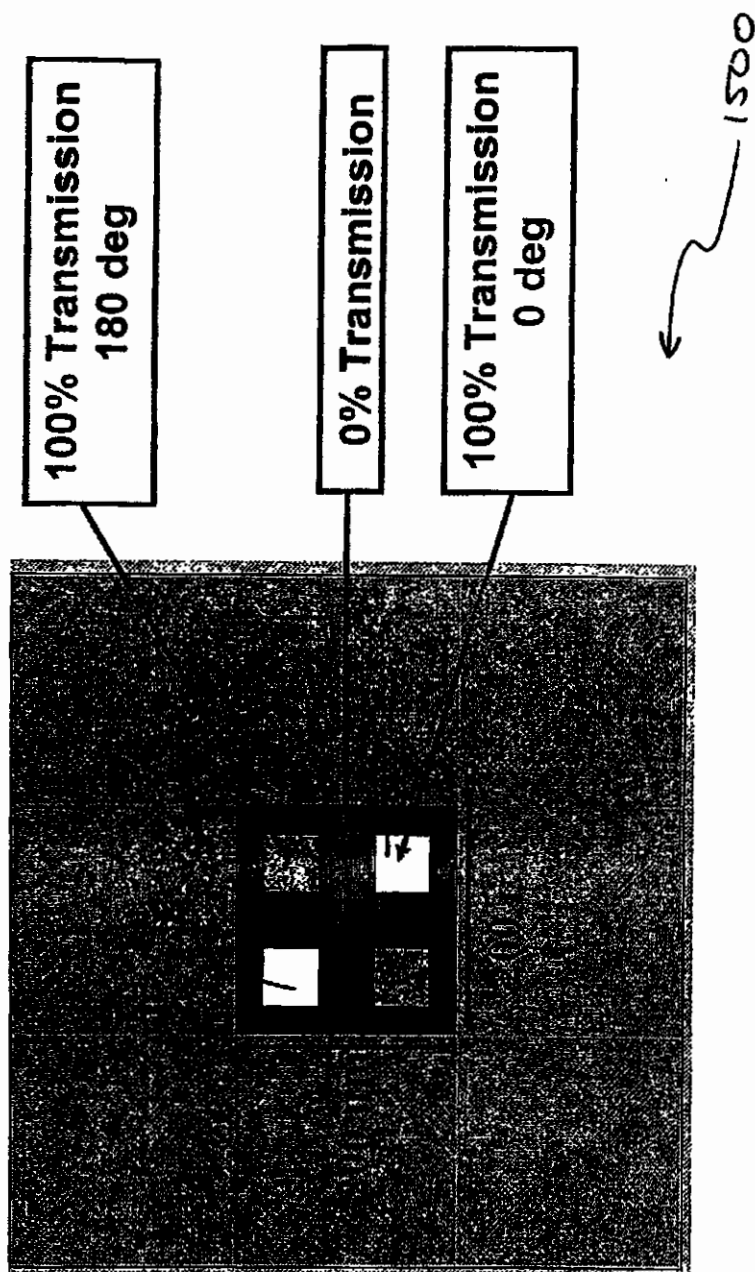


FIG. 15

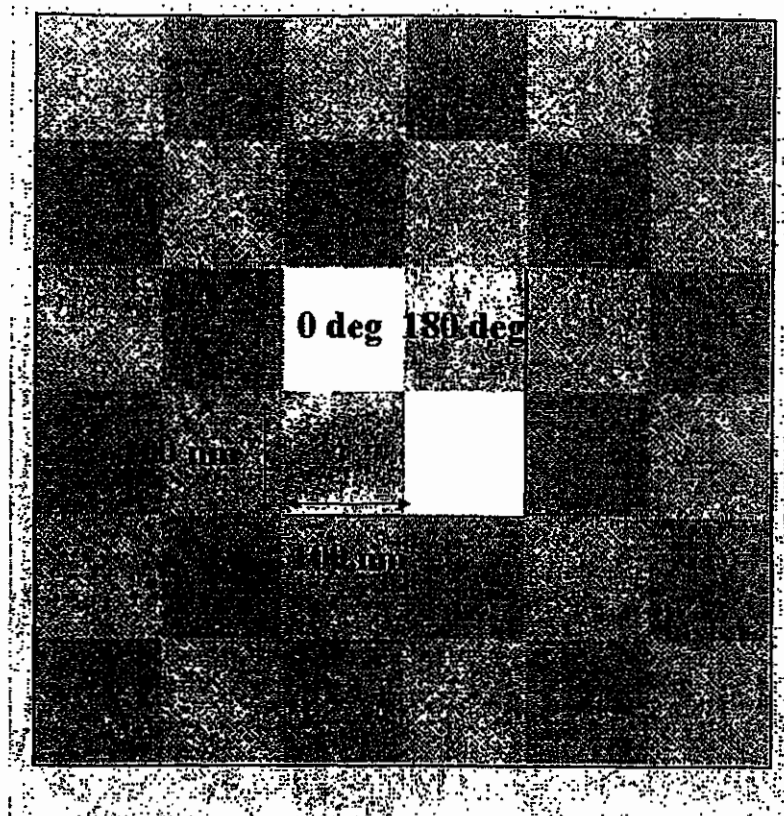


FIG. 16

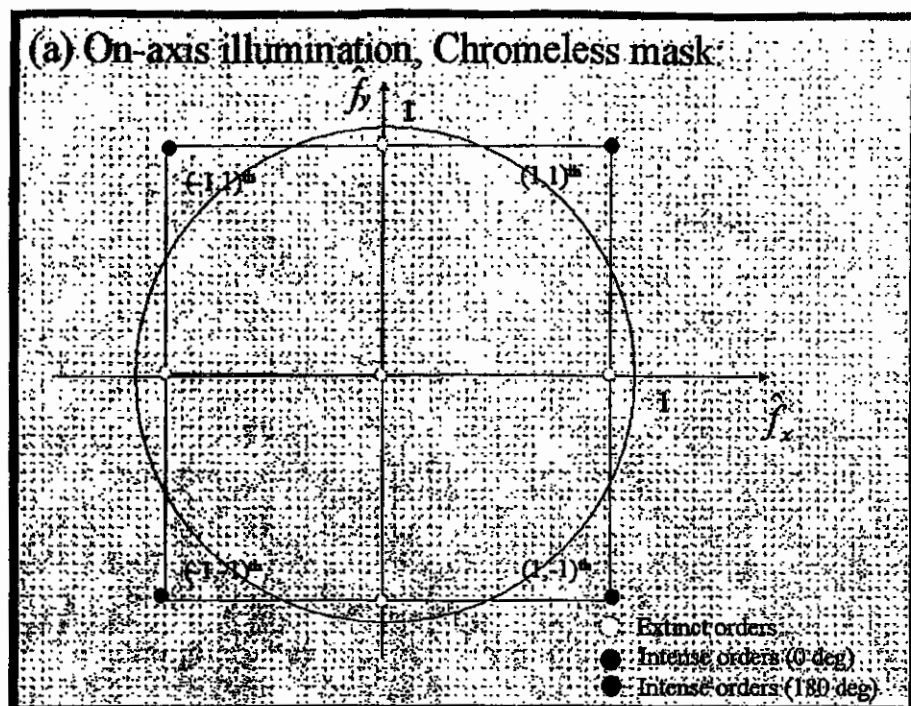


FIG. 17A

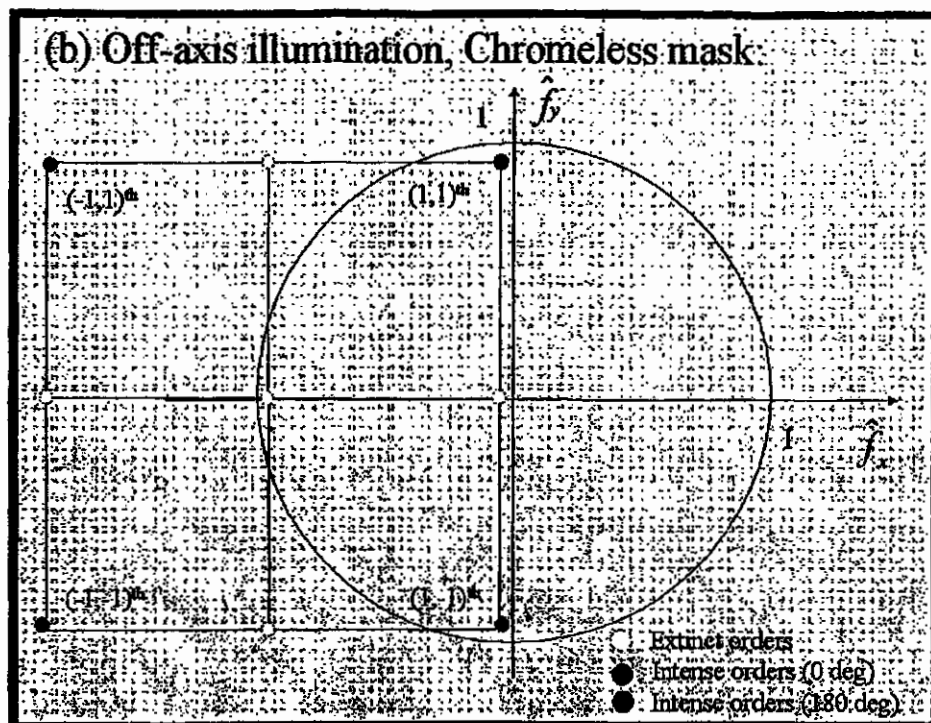


FIG. 17B

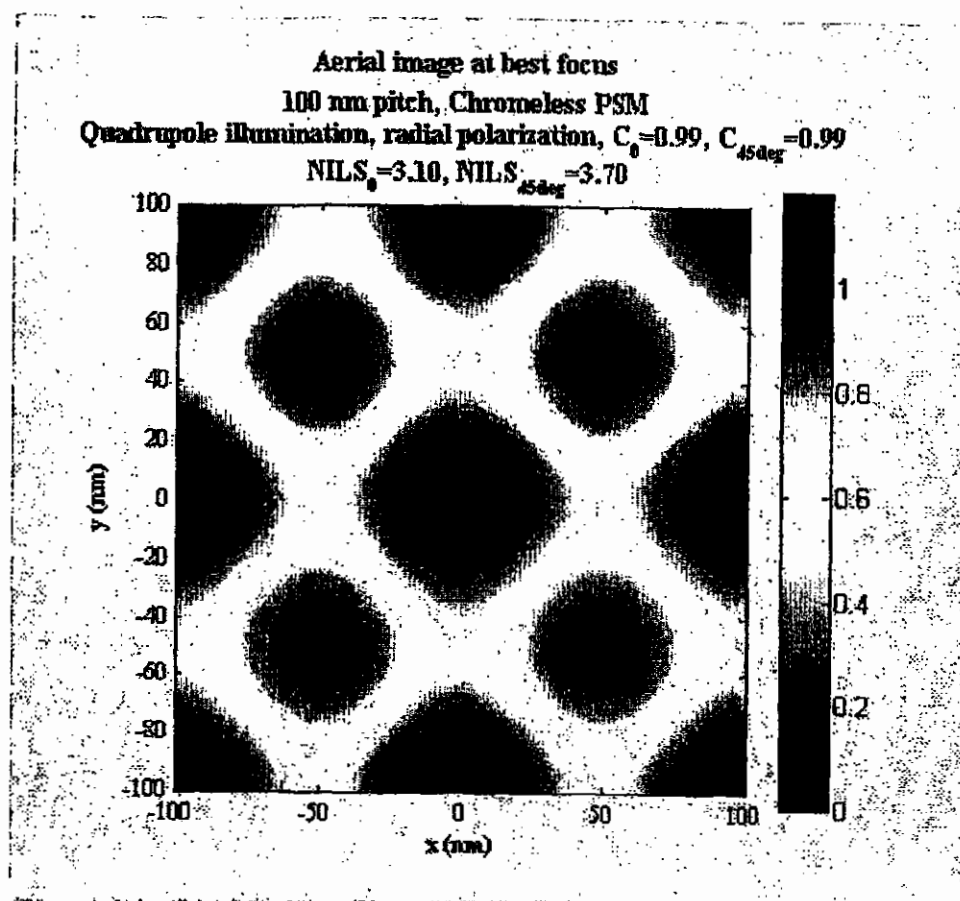


FIG. 18A

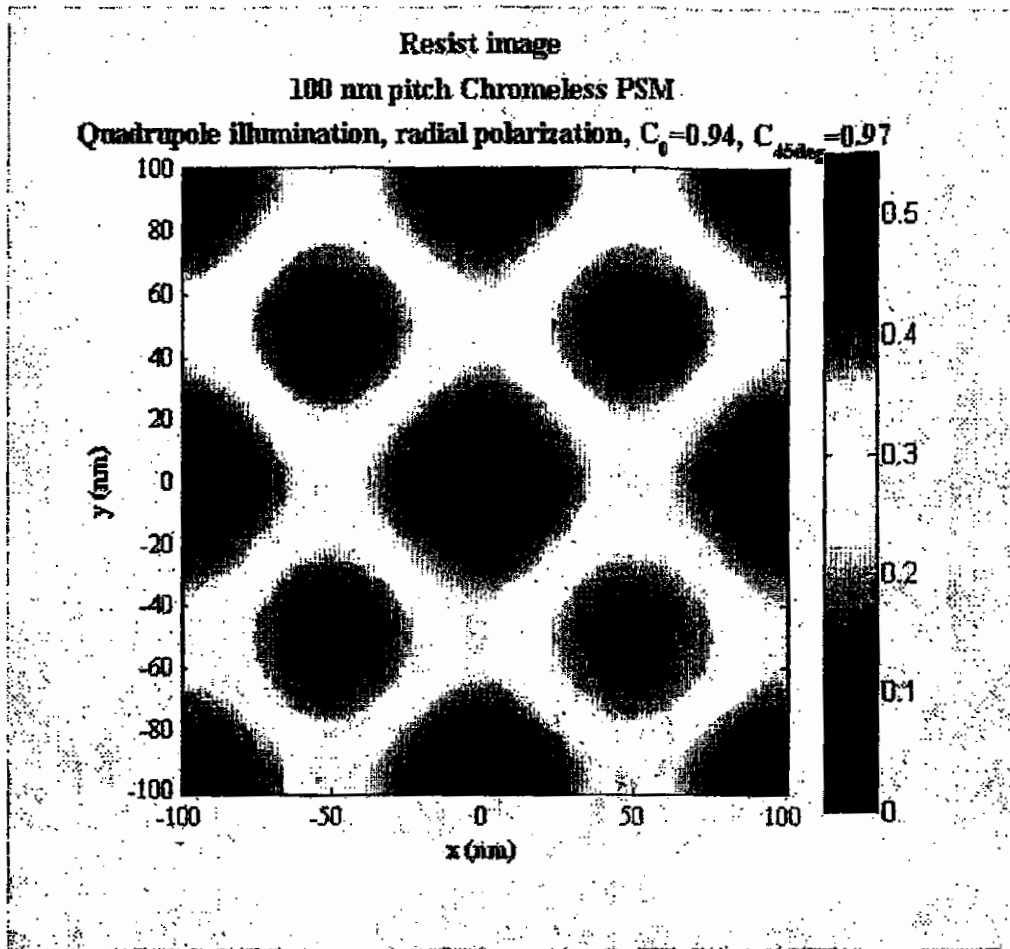
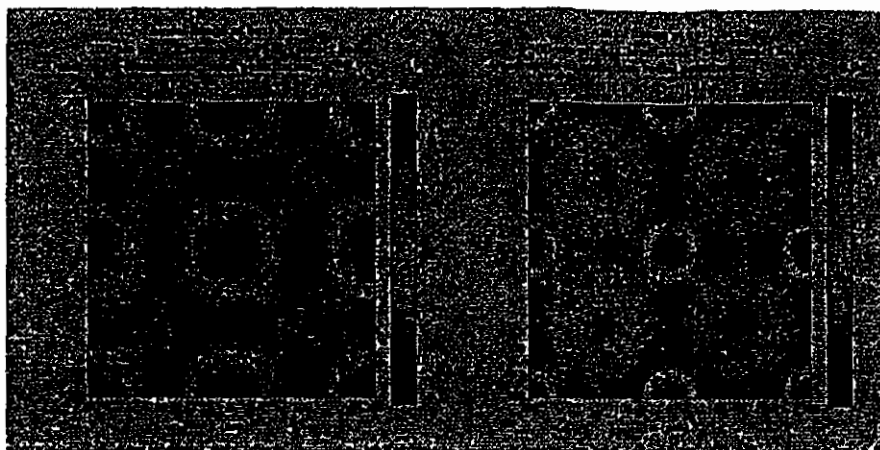


FIG. 18B

Aerial image at best focus, variable pitch, chrome:
alternating PSMs

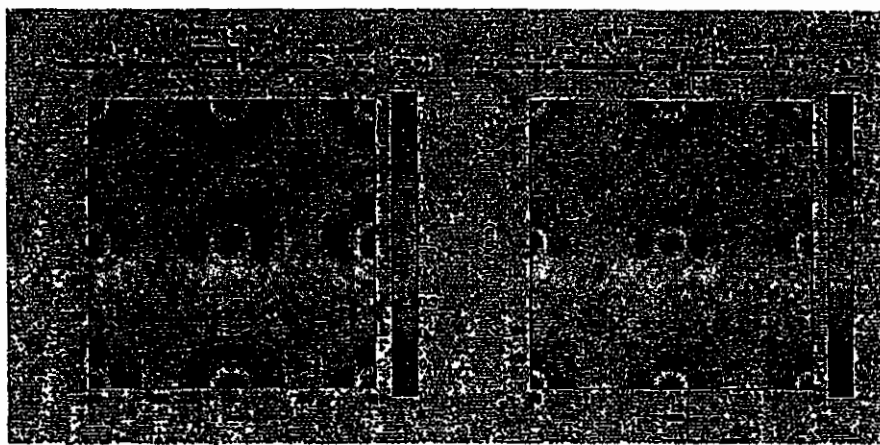
200-nm pitch

300-nm pitch



400-nm pitch

500-nm pitch



600-nm pitch

1000-nm pitch

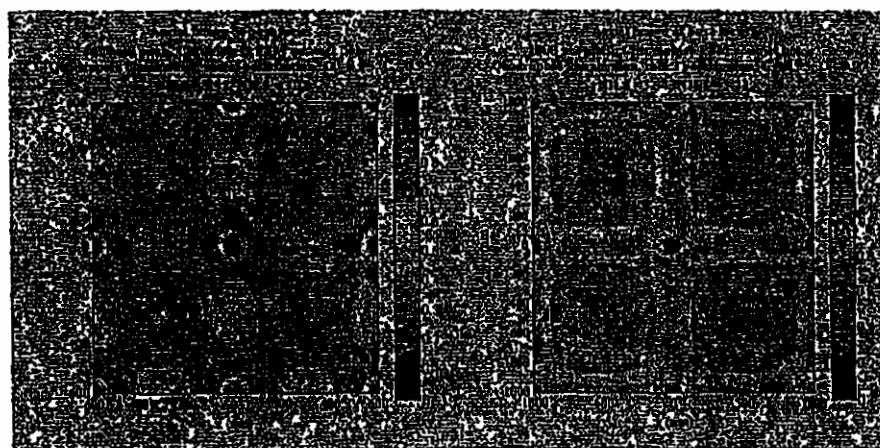


FIG. 19

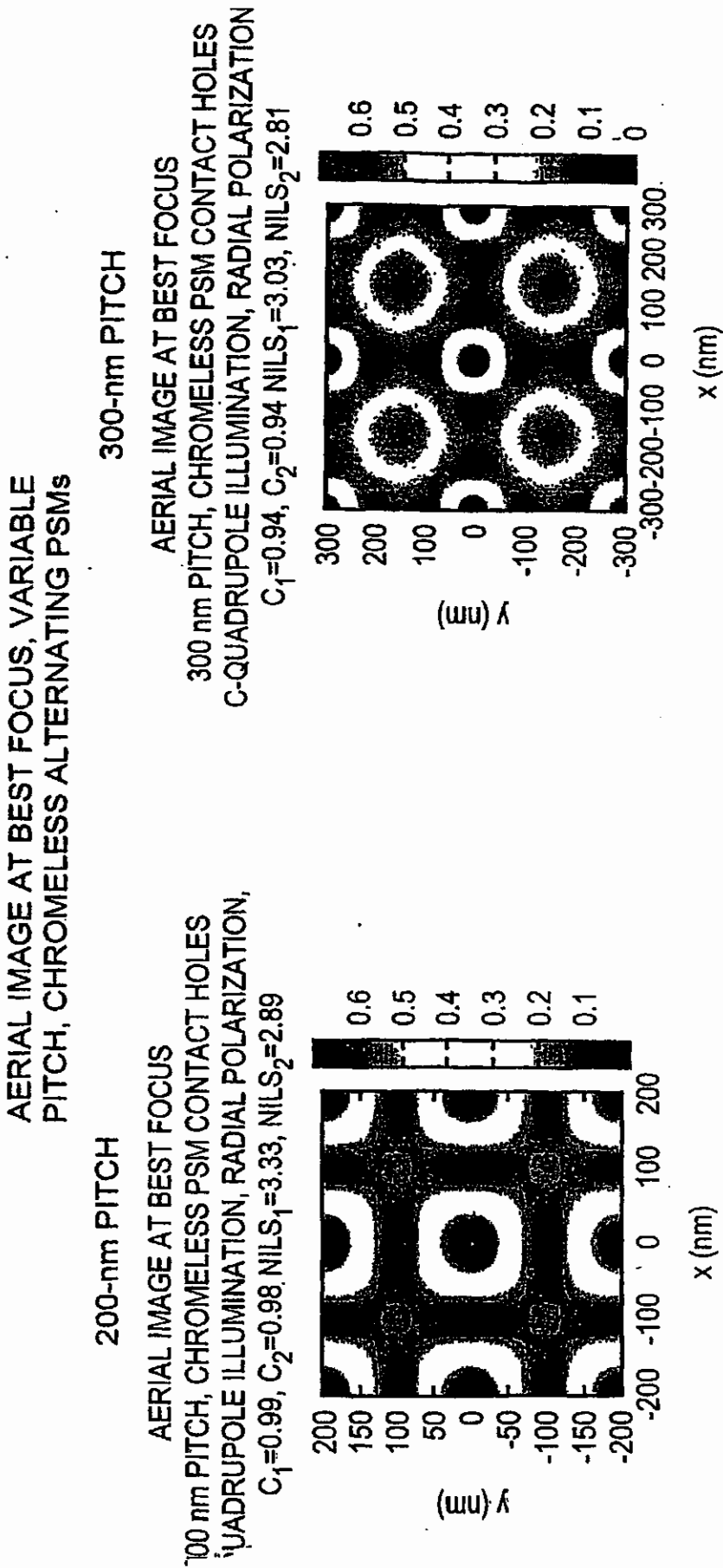


FIG.19A

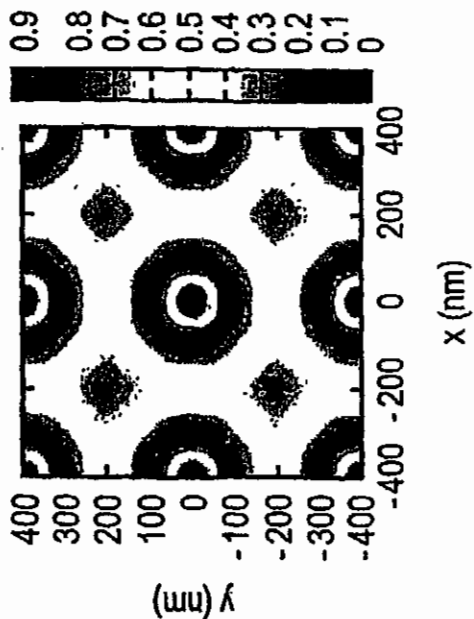
AERIAL IMAGE AT BEST FOCUS, PITCH, CHROMELESS ALTERNATING PSMs

400-nm PITCH

AERIAL IMAGE AT BEST FOCUS

400 nm PITCH, CHROMELESS PSM CONTACT HOLES
C-QUADRUPOLE ILLUMINATION, RADIAL POLARIZATION,

$C_1=0.95$, $C_2=0.94$ NILS₁=3.31, NILS₂=3.14



500-nm PITCH

AERIAL IMAGE AT BEST FOCUS

500 nm PITCH, CHROMELESS PSM CONTACT HOLES
C-QUADRUPOLE ILLUMINATION, RADIAL POLARIZATION,

$C_1=0.96$, $C_2=0.95$ NILS₁=3.35, NILS₂=3.23

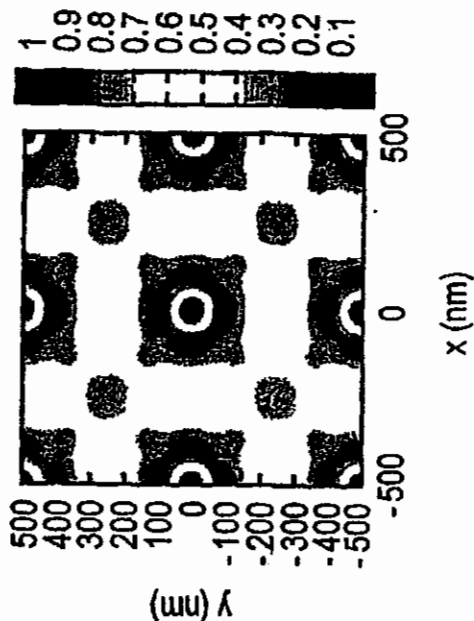


FIG.19B

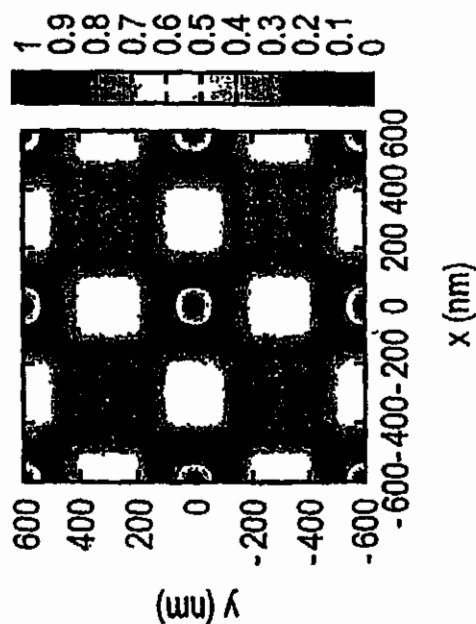
AERIAL IMAGE AT BEST FOCUS,
PITCH, CHROMELESS ALTERNATING PSMs

600-nm PITCH

AERIAL IMAGE AT BEST FOCUS

600 nm PITCH, CHROMELESS PSM CONTACT HOLES
C-QUADRUPOLE ILLUMINATION, RADIAL POLARIZATION,

$C_1=0.95$, $C_2=0.95$ NILS₁=3.32, NILS₂=3.13



1000-nm PITCH

AERIAL IMAGE AT BEST FOCUS

1000 nm PITCH, CHROMELESS PSM CONTACT HOLES
C-QUADRUPOLE ILLUMINATION, RADIAL POLARIZATION,

$C_1=0.95$, $C_2=0.97$ NILS₁=3.34, NILS₂=3.21

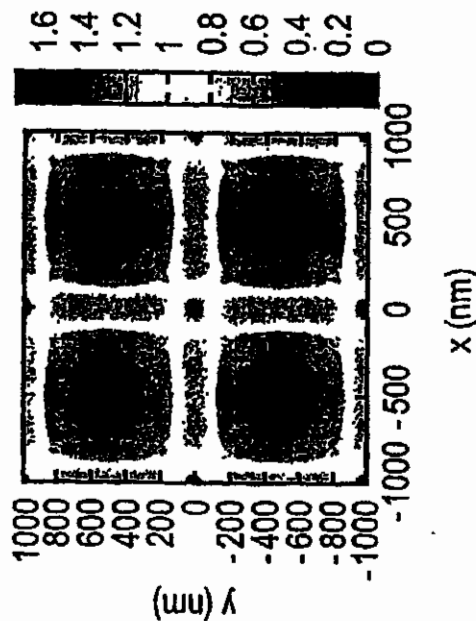


FIG.19C

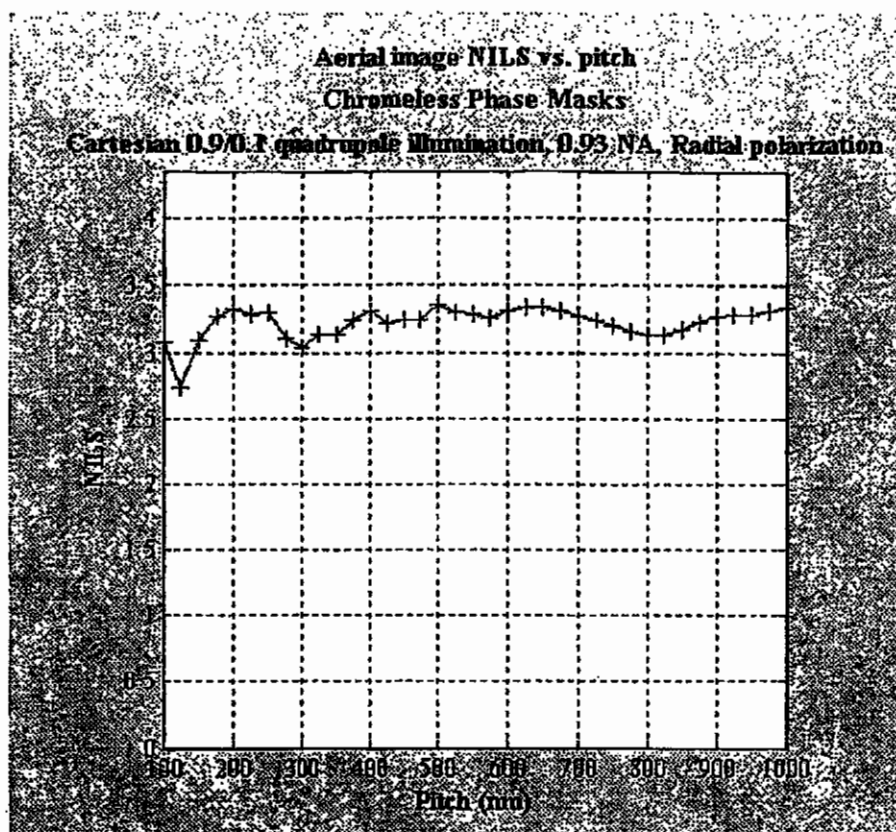


FIG. 20A

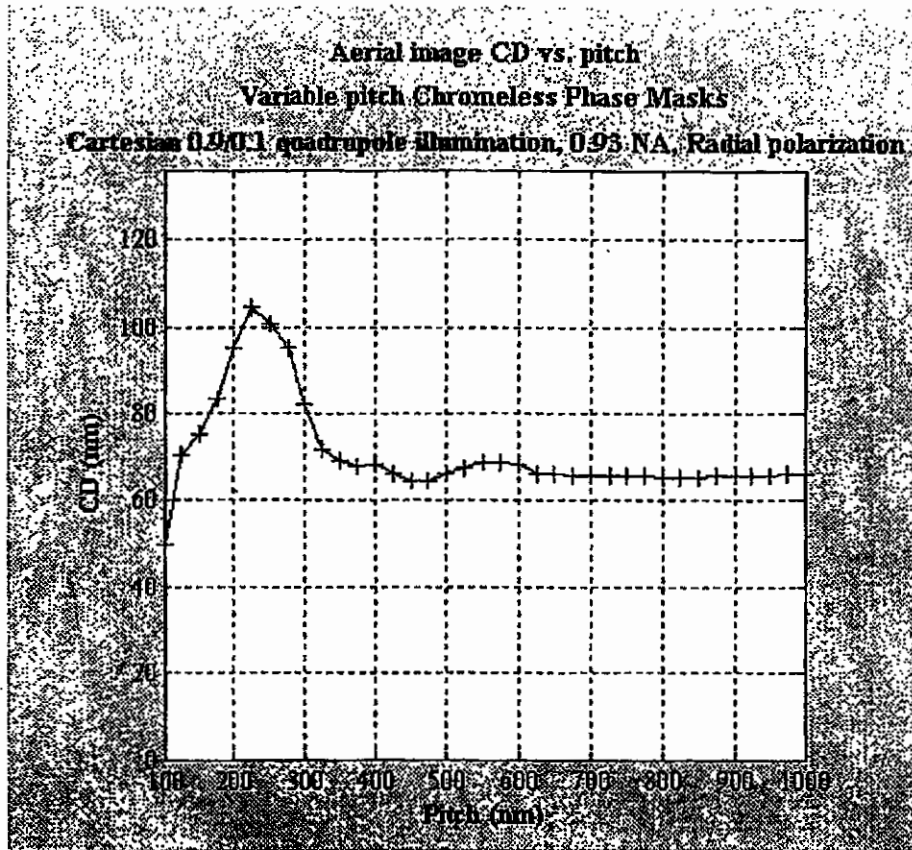


FIG. 20B

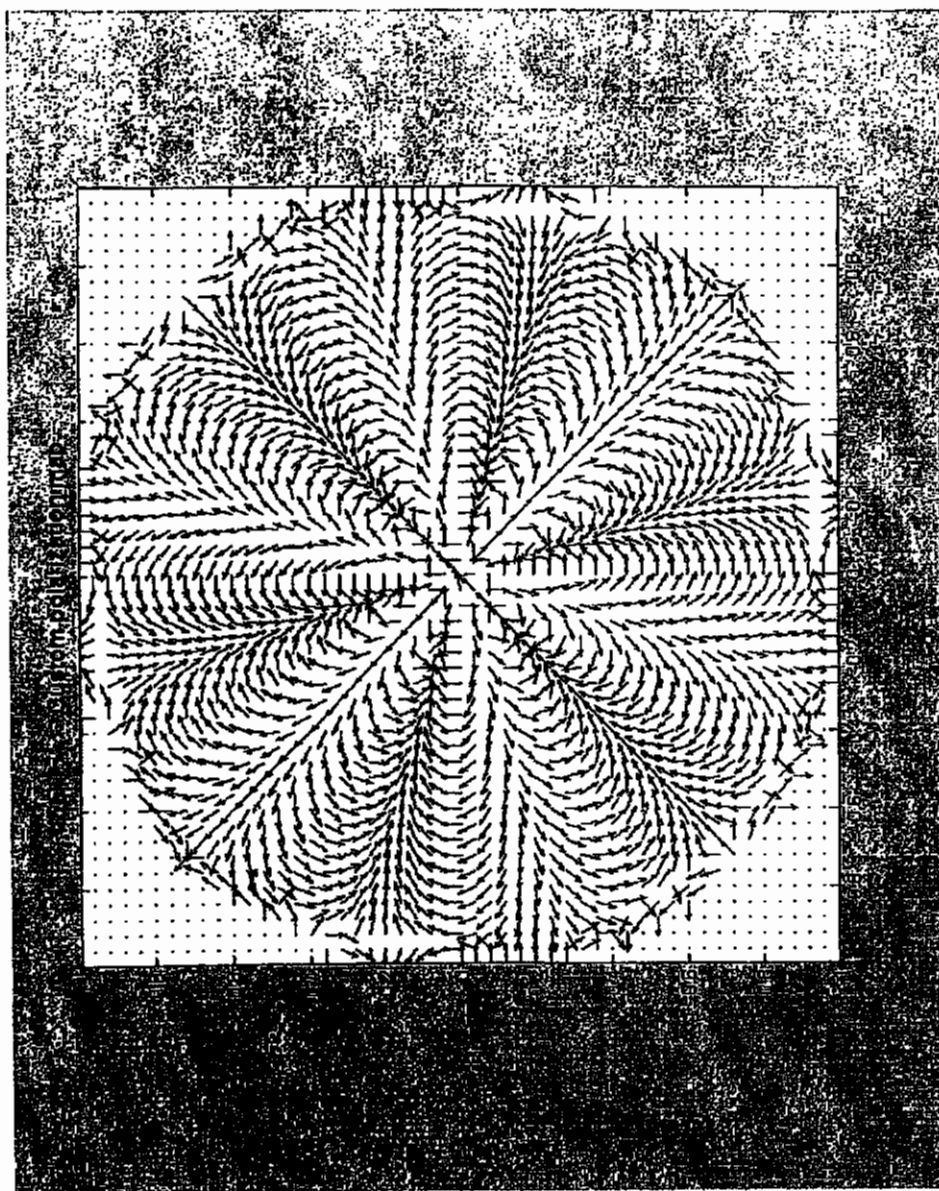


FIG. 21A

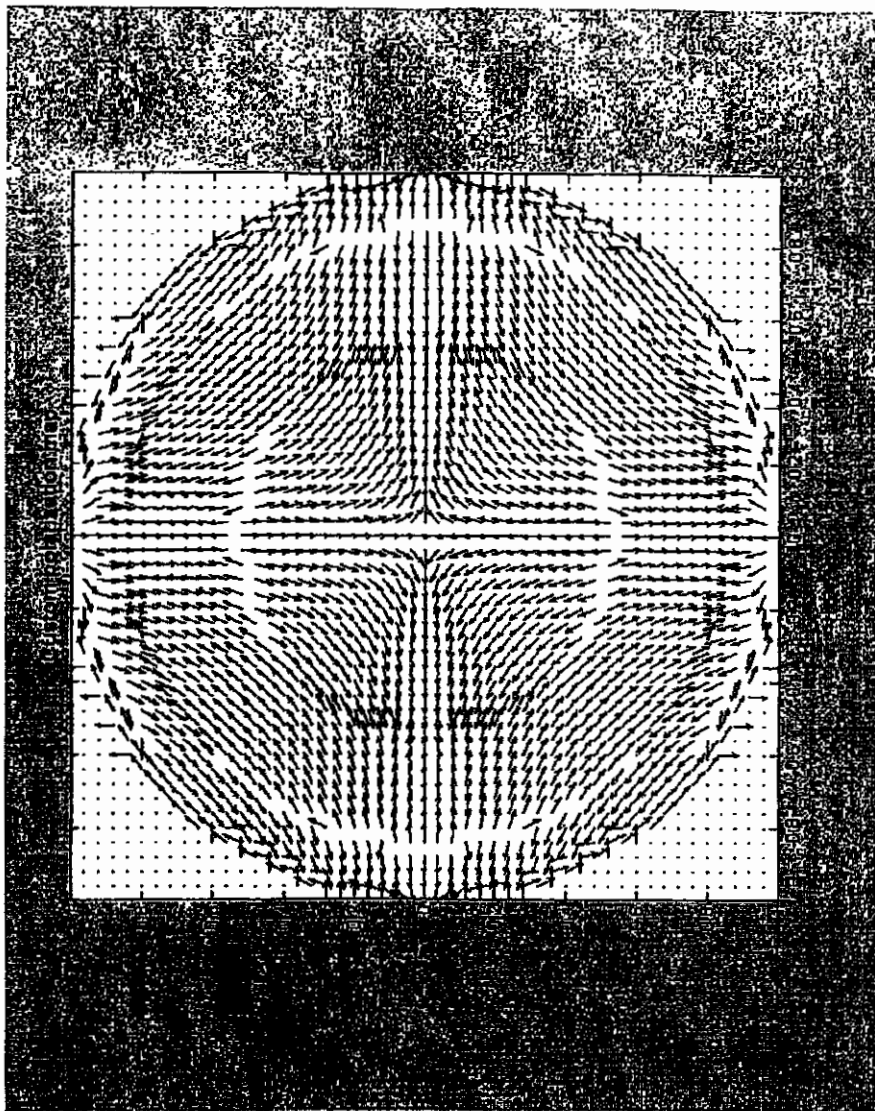


FIG. 21B

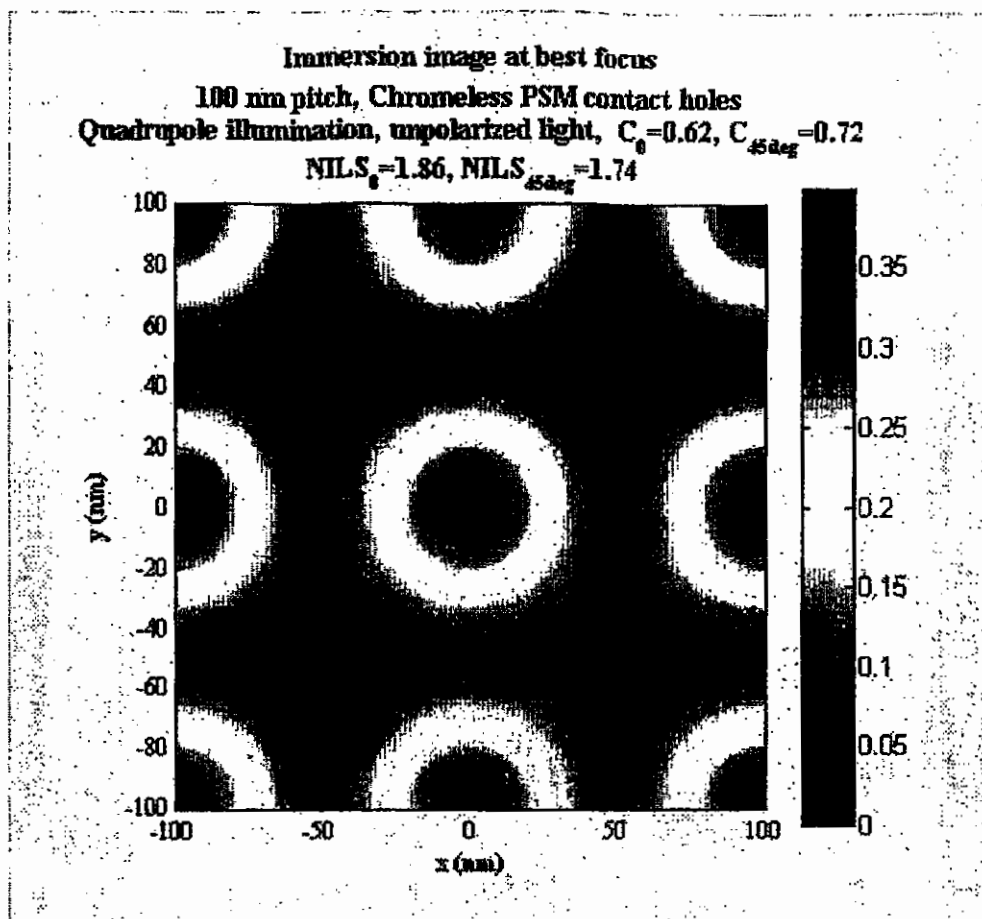


FIG. 22

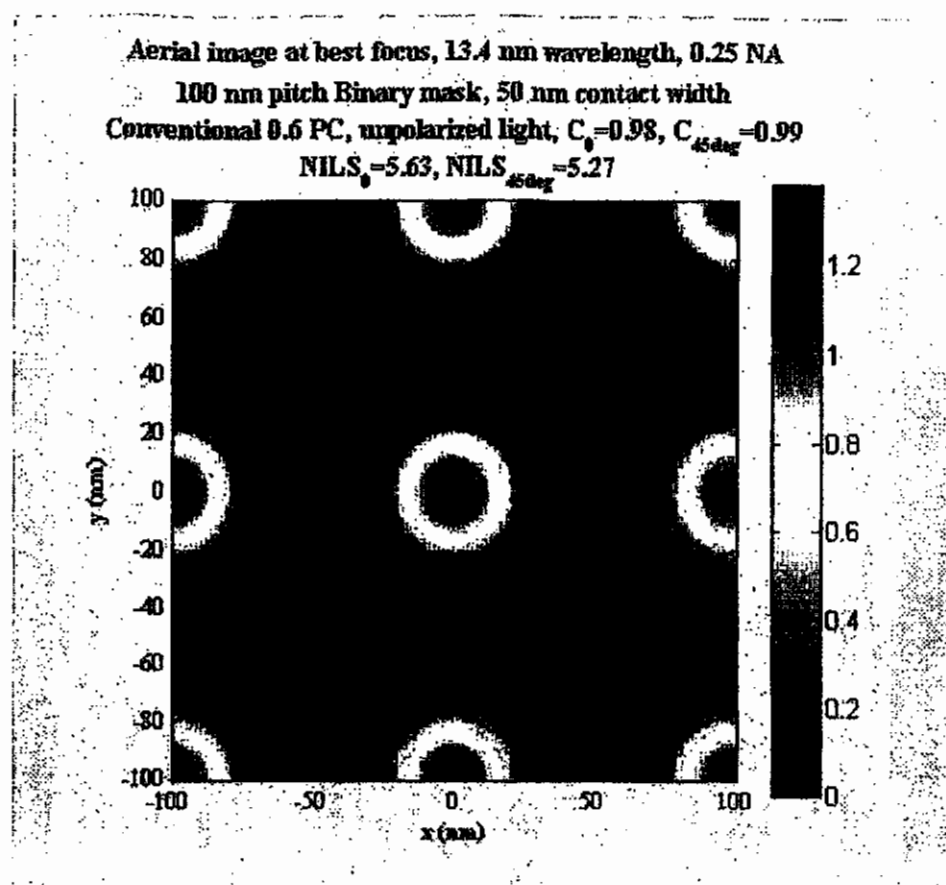


FIG. 23