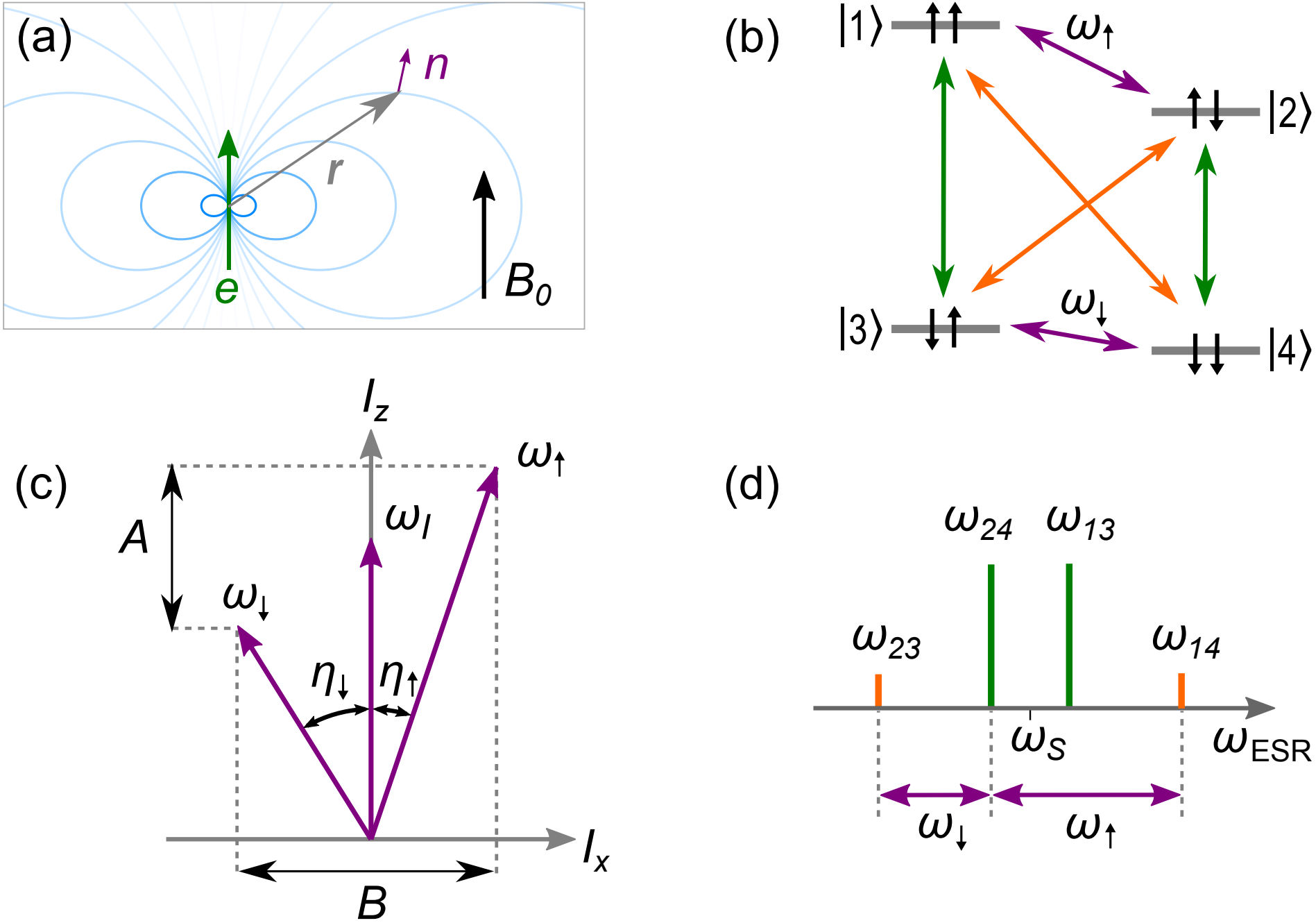
(a)
n
r
e
B_0
(b)
$|1\rangle$
$|2\rangle$
$|3\rangle$
$|4\rangle$
$\omega_\uparrow$
$\omega_\downarrow$
(c)
I_z
I_x
$\omega_\uparrow$
ω_I
$\omega_\downarrow$
A
$\eta_\downarrow$
$\eta_\uparrow$
B
(d)
ω_{24}
ω_{13}
ω_{23}
ω_{14}
ω_S
ω_{ESR}
$\omega_\downarrow$
$\omega_\uparrow$