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## Near-field enhancement characteristics of double-helix Au nanostructures

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**M**etallic nanostructures with helical shapes feature a broad spectrum of interesting radiation and polarization characteristics that can largely be controlled by varying their geometrical parameters. The author systematically studied the near-field radiation characteristics of diffractively coupled gold (Au) DNA-shaped nano-helices in the optical regime when different parameters were subjected to change. The parameters include inner radius, outer radius, length and cyclicity. By doing so, author demonstrated that the engineering of their geometrical parameters provides novel opportunities to achieve highly directional scattering along multiple directions with controlled polarization states in the visible regime.