6. The system of Claim 5, wherein the device is configured to allow direct pumping by the first transistor to initiate a SPASER action.

7. The system of Claim 1, wherein the device is configured such that a form factor of the device is substantially similar to a form factor of the first transistor.

8. The system of Claim 1, wherein the device is configured for direct modulation of the SPASER action at a speed that is substantially similar to the working frequency of at least one of the first transistor and the second transistor of the transistor pair.

~~9. The system of Claim 1, wherein the phototransistor applies the output current to a gate of the second transistor of the transistor pair.~~

~~10~~9. A method of a nanostructure that generates and amplifies nanolocalized optical fields via Surface Plasmon Amplification by Stimulated Emission of Radiation (SPASER) action comprising:

receiving, by the nanostructure, an electrical energy to initiate a pumping action associated with the SPASER action; and

responsive to initiating the pumping action, outputting, by the nanostructure, surface plasmon polaritons (SPPs) to a plasmonic interconnect wire that propagates the SPPs to a light-sensitive transistor that is configured to detect the SPPs and charge a gate of a transistor associated with a transistor pair.

~~11~~10. The method of Claim ~~10~~9, wherein the step of outputting the SPPs further comprises generating, by the nanostructure, surface plasmons (SPs) that are coupled in the near-field to the propagating (SPPs) of the plasmonic interconnect wire.

~~12~~11. The method of Claim ~~10~~9, wherein the electrical energy is received from an external electrical energy source.

~~13~~12. The method of Claim ~~10~~9, wherein the electrical energy is a drive current of ~~an~~ the other transistor of the transistor pair.

~~14~~13. The method of Claim ~~10~~9, wherein the plasmonic interconnect wire is a copper wire capable of propagating the SPPs.

~~15~~14. The method of Claim ~~10~~9, wherein the nanostructure is coupled to an output terminal of the other transistor that delivers the drain current to the nanostructure.

~~16~~15. The method of Claim ~~10~~9, wherein the light-sensitive transistor is coupled to the nanostructure via the plasmonic interconnect wire.

~~17. The method of Claim 10, wherein responsive to detection of the SPPs by the light sensitive transistor, the light sensitive transistor is configured to generate an output current that charges the gate of the transistor.~~

~~18~~16. The method of Claim ~~10~~9, wherein the form factor of the nanostructure approximately matches the form factor of at least one of the transistors of the transistor pair.

~~19~~17. A method, comprising:

applying, by a first transistor of a transistor pair, drive current output to a device for Surface Plasmon Amplification by Stimulated Emission of Radiation (Spaser device) to directly modulate the SPASER device, the SPASER device responsive to the drive current to output surface plasmons (SPs) that couple in the near-field to propagating surface plasmon polaritons (SPPs) of an interconnect wire; and

receiving, by a second transistor of the transistor pair, charging current from a phototransistor that is configured to detect the SPPs from the SPASER device, the phototransistor to generate the charging current responsive to the SPPs.

~~20~~18. The method of Claim ~~19~~17, wherein applying the drive current by a first transistor comprises outputting the driver current by one of a drain or a source of the first transistor.

~~21~~19. The method of Claim ~~19~~17, wherein responsive to the SPPs, the phototransistor is configured to generate the charging current for application to a gate of the second transistor.

~~22~~20. The method of Claim ~~19~~17, wherein the interconnect wire comprises a plasmonic copper wire capable of propagating the SPPs, and wherein the SPASER device is coupled to the phototransistor via the interconnect wire.

~~23~~21. The method of Claim ~~19~~17, wherein the drive current output by the first transistor provides a direct electrical pumping of the SPASER device.

~~24~~22. The method of Claim ~~23~~21, wherein the direct electrical pumping of the SPASER device is operative to directly modulate the SPASER device.

~~25~~23. A processor, comprising:

a transistor pair comprising a first transistor and a second transistor, the first transistor configured to output a drive current and the second transistor configured to receive a charging current;

a device configured to generate surface plasmons (SPs) via a Surface Plasmon Amplification by Stimulated Emission of Radiation (SPASER) action responsive to the drive current output by the first transistor; and

a phototransistor, connected to the device via an interconnect wire and configured to generate the charging current for charging a gate of the second transistor responsive to the SPs output by the device to the interconnect wire.

~~26~~24. The processor of Claim ~~25~~23, wherein the SPs couple in the near-field to propagating surface plasmon polaritons (SPPs) of the interconnect wire.

~~27~~25. The processor of Claim ~~26~~24, wherein the device is coupled to an output terminal of the first transistor, the second transistor is coupled to an output terminal of the phototransistor, and the device is coupled to the phototransistor via the interconnect wire that is capable of propagating SPPs.

~~28~~26. The system of Claim 1, wherein the interconnect wire comprises an aluminum wire.

~~29~~27. The system of Claim 1, wherein the interconnect wire comprises a doped semiconductor wire.