What is claimed is:

1. An optoelectronic module comprising:

a support substrate on which are mounted first and second optoelectronic devices;

a first transmissive cover over the first optoelectronic device at a first height above the support substrate;

a second transmissive cover over the second optoelectronic device at a second height above the support substrate, the second height being different from the first height;

at least one respective passive optical element on each of the first and second transmissive covers, wherein the first and second transmissive covers are composed of a material different from that of the passive optical elements;

exterior walls laterally encircling the first and second optoelectronic devices, the exterior walls composed of a material that is non-transparent to one or more wavelengths of light emitted by or detectable by the first and second optoelectronic devices; and

an interior wall separating the first and second optoelectronic devices from one another, the interior wall being composed of a material that is nontransparent to one or more wavelengths of light emitted by or detectable by the first and second optoelectronic devices.

~~2. The optoelectronic module of claim 1 further including at least one respective passive optical element on at least one of the transmissive covers.~~

~~3~~2. The optoelectronic module of any one of the previous claims wherein at least one of the first or second transmissive covers is tilted at an angle with respect to the support substrate.

~~4~~3. The optoelectronic module of any one of the previous claims wherein the first transmissive cover has a different thickness from a thickness of the second transmissive cover.

~~5~~4. The optoelectronic module of any one of the previous claims wherein an optical channel for the first optoelectronic device defines a first focal length, and wherein an optical channel for the second optoelectronic device defines a second focal length different from the first focal length.

~~6~~5. The optoelectronic module of any one of the previous claims wherein the first optoelectronic device includes a light emitting element arranged to emit light through the first transmissive cover, and wherein the second optoelectronic device includes a light detecting element arranged to detect light received through the second transmissive cover.

~~7~~6. The optoelectronic module of any one of the previous claims wherein the exterior walls separate the support substrate and the transmissive covers from one another.

~~8~~7. The optoelectronic module of any one of the previous claims wherein a respective side edge of each of the transmissive covers is in contact with the interior wall.

~~9~~8. The optoelectronic module of any one of the previous claims wherein an outer side edge of each of the transmissive covers is substantially flush with a respective outer side of the exterior walls.

~~10~~9. The optoelectronic module of any one of claims 1 – ~~9~~8 wherein an outwardly facing side edge of each of the transmissive covers is covered by an exterior wall portion that is non-transparent to one or more wavelengths of light emitted by or detectable by the first and second optoelectronic devices.

~~11. The optoelectronic module of claim 10 wherein the exterior wall portions covering the outwardly facing side edges of the transmissive covers are composed of a material that is nontransparent to one or more wavelengths of light emitted by or detectable by the first and second optoelectronic devices.~~

~~12~~10. The optoelectronic module of any one of the previous claims further including a baffle over the transmissive covers, wherein the baffle is composed of a material that is nontransparent to one or more wavelengths of light emitted by or detectable by the first and second optoelectronic devices.

~~13~~11. A method of fabricating optoelectronic modules, the method comprising:

supporting a plurality of singulated transmissive substrates in a combined replication and vacuum injection tool, wherein various ones of the singulated transmissive substrates are supported at a first height and other ones of the singulated transmissive substrates are supported at a second different height;

replicating passive optical elements onto at least one side of at least one of the singulated transmissive substrates while the singulated transmissive substrates are supported in the combined replication and vacuum injection tool;

using a vacuum injection technique to form a respective spacer feature on a first side of each singulated transmissive substrate and a respective baffle feature on a second side of each singulated transmissive substrate, and to form interior wall features separating adjacent ones of the singulated transmissive substrates from one another, while the singulated transmissive substrates are supported in the combined replication and vacuum injection tool; and

removing from the combined replication and vacuum injection tool a structure comprising the transmissive substrates, the passive optical elements, the spacer features and the interior wall features.

~~14~~12. The method of claim ~~13~~11 further including:

attaching the structure to a support substrate on which are mounted a plurality of optoelectronic devices to obtain a stack in which each optoelectronic device is disposed below a portion of a respective one of the transmissive substrates; and

separating the stack into multiple optoelectronic modules each of which includes a first transmissive cover over a first one of the optoelectronic devices at a first distance and a second transmissive cover over a second one of the optoelectronic devices at a second distance.

~~15~~13. The method of claim ~~13~~11 further including:

separating the structure into a plurality of sections; and

attaching optoelectronic devices to one or more sections of the structure to form one or more optoelectronic modules.

~~16~~14. The method of any one of claims ~~13~~11 - ~~15~~13 including replicating passive optical elements onto both sides of at least one of the singulated transmissive substrates while the singulated transmissive substrates are supported in the combined replication and vacuum injection tool.

~~17~~15. A method of fabricating optoelectronic modules, the method comprising:

supporting a plurality of singulated transmissive substrates on a sacrificial substrate in a first combined replication and vacuum injection tool, wherein various ones of the singulated transmissive substrates are supported at a first height and other ones of the singulated transmissive substrates are supported at a second different height;

replicating first passive optical elements onto a first side of at least one of the singulated transmissive substrates while the singulated transmissive substrates are supported in the first combined replication and vacuum injection tool;

using a vacuum injection technique to form a respective spacer feature on the first side of each singulated transmissive substrate and to form interior wall features separating adjacent ones of the singulated transmissive substrates from one another while the singulated transmissive substrates are supported in the first combined replication and vacuum injection tool;

removing a first structure from the first combined replication and vacuum injection tool and separating the first structure from the sacrificial substrate, wherein the first structure comprises the transmissive substrates, the first passive optical elements, the spacer features and the interior wall features;

using a second combined replication and vacuum injection tool to replicate second passive optical elements onto a second side of at least one of the singulated transmissive substrates;

using the second combined replication and vacuum injection tool to form a respective baffle feature on the second side of at least one of the transmissive substrates; and

removing from the second combined replication and vacuum injection tool a second structure comprising the transmissive substrates, the first and second passive optical elements, the spacer features, the interior wall features and the baffle features.

~~18~~16. The method of claim ~~17~~15 further including:

attaching the second structure to a support substrate on which are mounted a plurality of optoelectronic devices to obtain a stack in which each optoelectronic device is disposed below a portion of a respective one of the transmissive substrates; and

separating the stack into multiple optoelectronic modules each of which includes a first transmissive cover over a first one of the optoelectronic devices at a first distance and a second transmissive cover over a second one of the optoelectronic devices at a second distance.