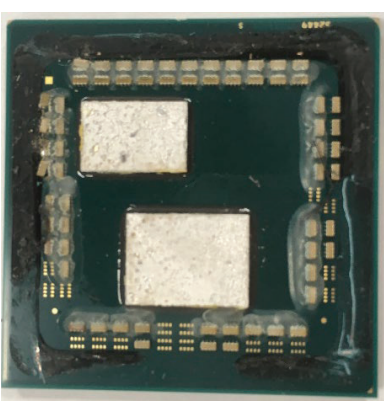
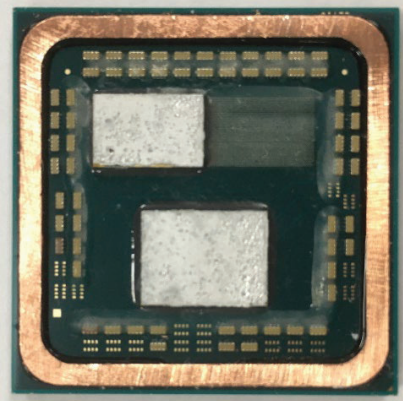
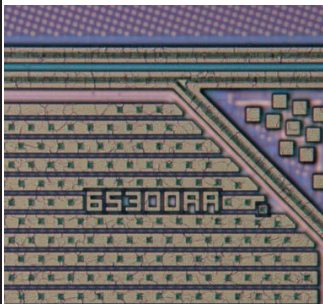


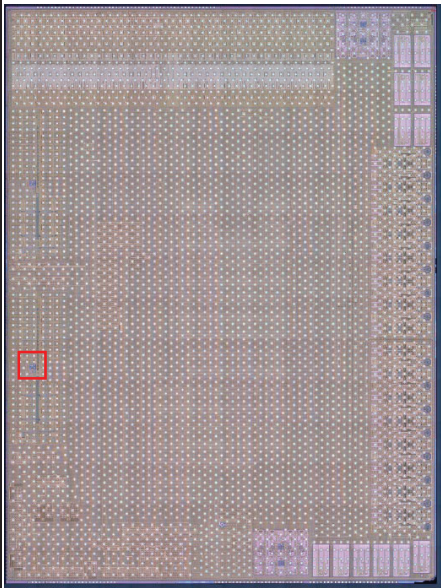
Exhibit 32

Claim Chart for U.S. Patent No. 9,590,582
and AMD Ryzen 5 5600X, Ryzen 7
5800X, Ryzen Threadripper 3960X,
Radeon 6500/6600 XT

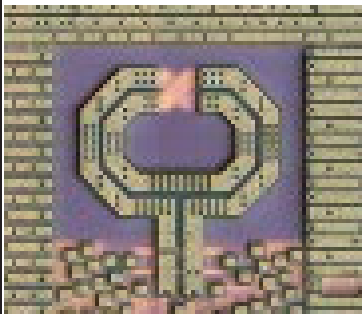
U.S. Patent No. 9,590,582	Analysis of Accused Products
1(a): A semiconductor device with an inductor-capacitor (LC) resonant circuit, comprising:	The Accused Products include a semiconductor device with an inductor-capacitor (LC) resonant circuit, at least as reflected below: AMD Ryzen5 5600X and AMD Ryzen7 5800X Each of the AMD Ryzen5 5600X and AMD Ryzen7 5800X comprises a Client IO die and a compute core, as shown in the images below:  A serial number is shown on the Client IO die, as depicted below, and on information and belief, many AMD products contain the same, or substantially similar, Client IO dies. Such Client IO dies comprise the claimed semiconductor device with an inductor-capacitor (LC) resonant circuit:



The semiconductor device with an inductor-capacitor (LC) resonant circuit in the exemplary Client IO die is marked by a red box shown in the image below:

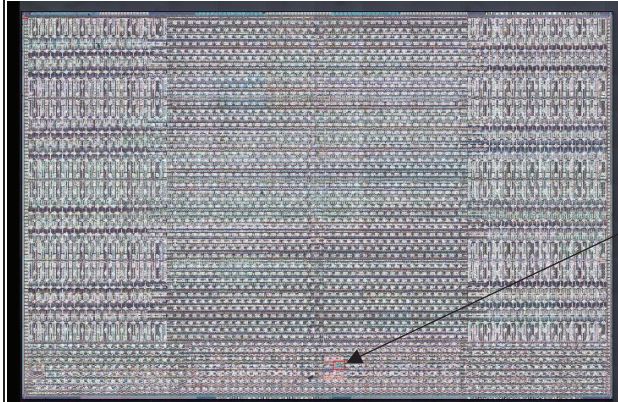


A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the exemplary Client IO die is depicted below:



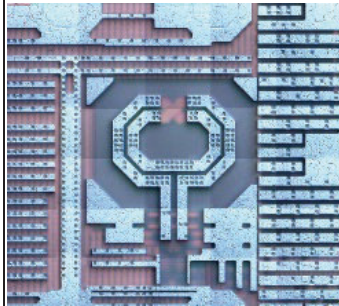
In addition, the compute cores of the AMD Ryzen5 5600X and AMD Ryzen7 5800X, and similar AMD products, comprise a semiconductor device with an inductor-capacitor (LC) resonant circuit. The location of the exemplary semiconductor device with an exemplary inductor-

capacitor (LC) resonant circuit in the exemplary compute core is marked with a red box in the image below.



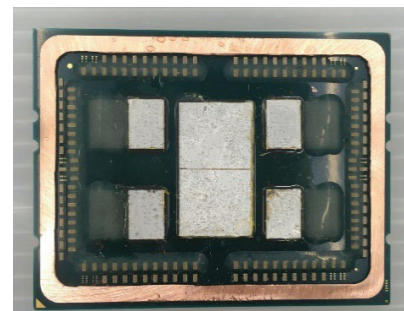
Semiconductor device with an exemplary inductor-capacitor (LC)

A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the compute core is depicted below:

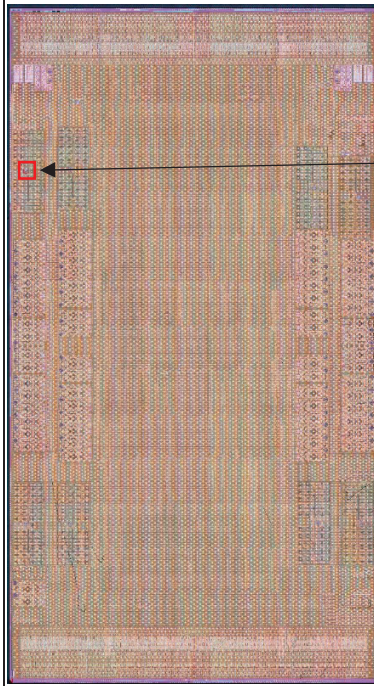


AMD Ryzen Threadripper 3960X

The AMD Ryzen Threadripper 3960X comprises a Server IO die and four compute cores, as shown in the pictures below.

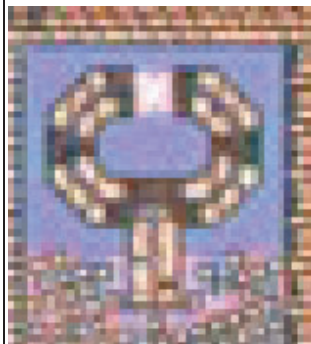


The Server IO die of the AMD Ryzen Threadripper 3960X comprises a semiconductor device with an inductor-capacitor (LC) resonant circuit, which is marked by the red box shown below:



Semiconductor device with an exemplary inductor-capacitor (LC) resonant circuit

A magnified image of the semiconductor device with an exemplary inductor-capacitor (LC) resonant circuit in the Server IO die is depicted below:

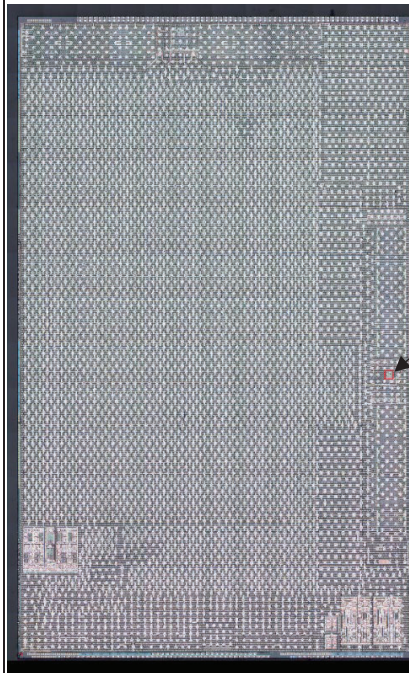


AMD Radeon RX 6500 XT / RX 6600 XT

The AMD Radeon RX 6500 XT (which, on information and belief, also represents other, substantially similar products, including at least the Radeon RX 6600 XT) comprises one die, as shown in the picture below.

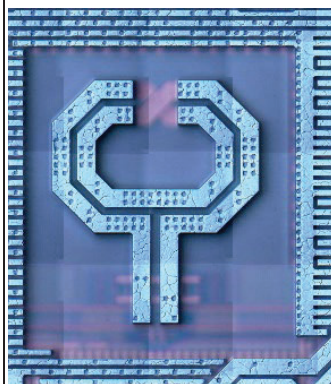


A semiconductor device with an inductor-capacitor (LC) resonant circuit in AMD Radeon RX 6500 XT is marked by a red box below:

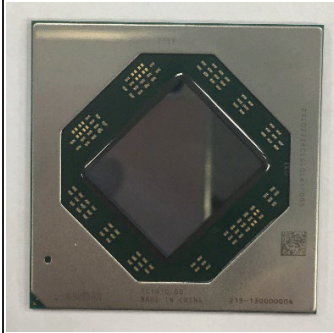


Semiconductor device with an exemplary inductor-capacitor (LC) resonant circuit (within the red box)

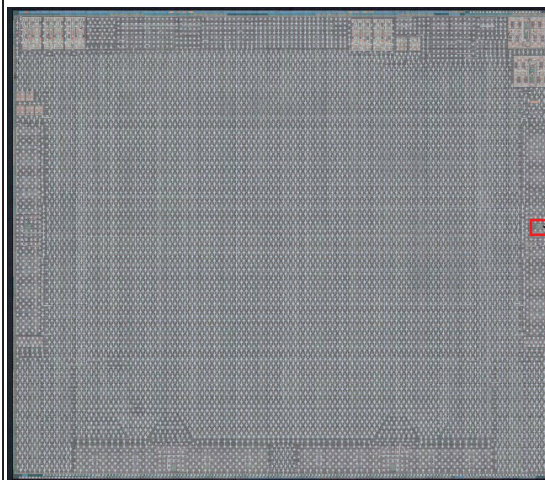
A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the AMD Radeon RX 6500 XT is depicted below:



The AMD Radeon RX 6600 XT as shown in the picture below.

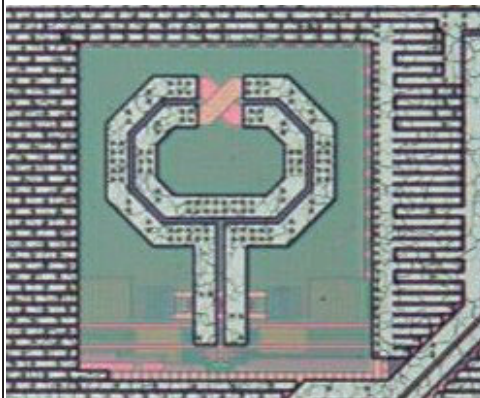


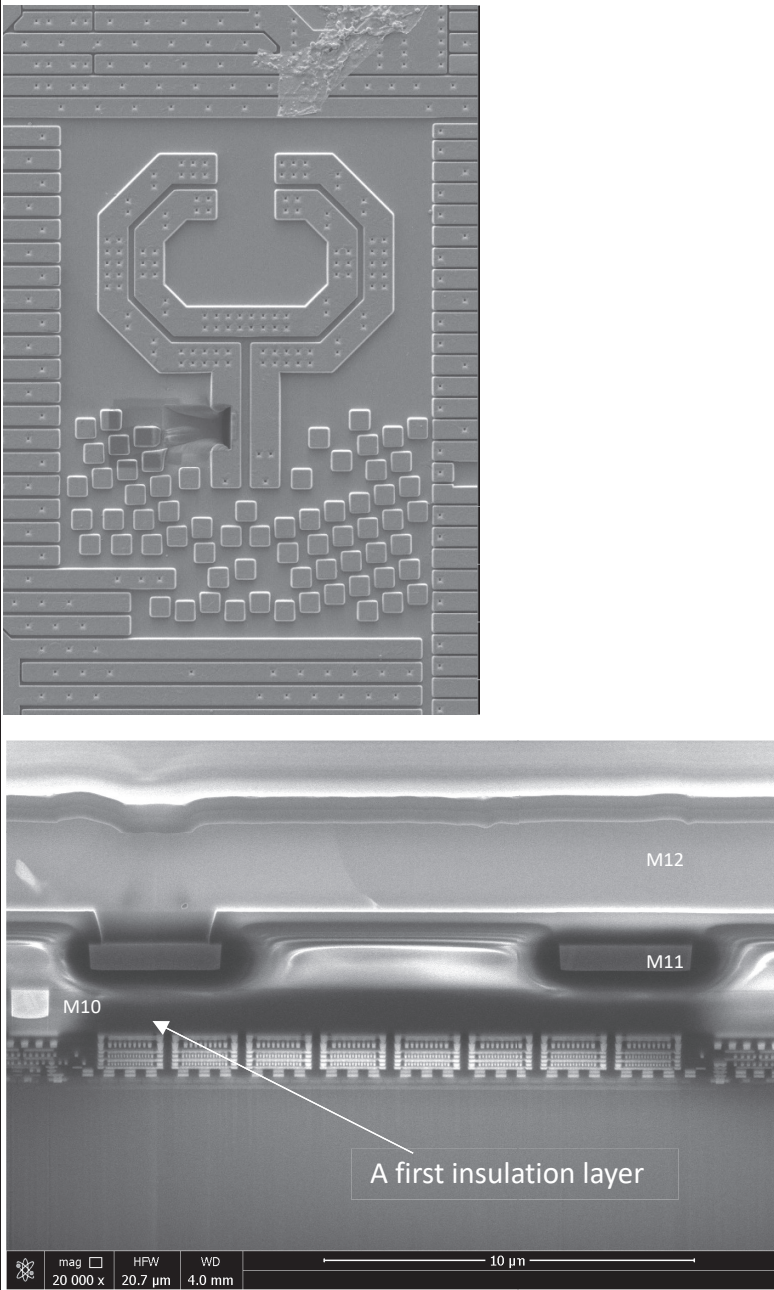
A semiconductor device with an inductor-capacitor (LC) resonant circuit in AMD Radeon RX 6600 XT is marked by a red box below:

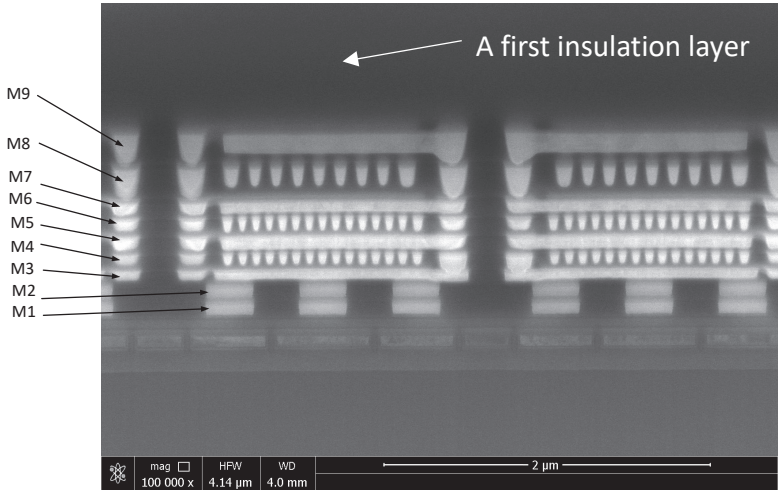
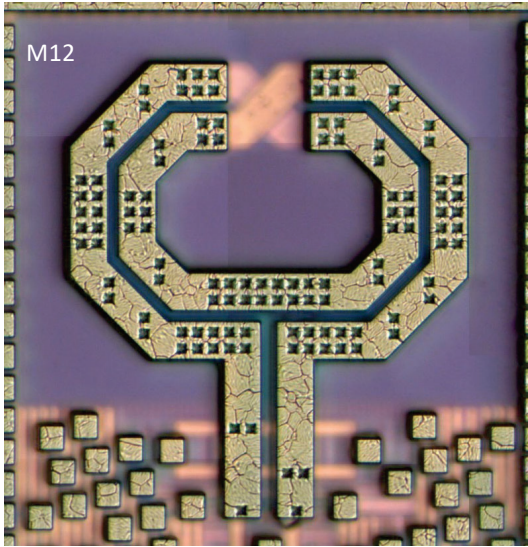


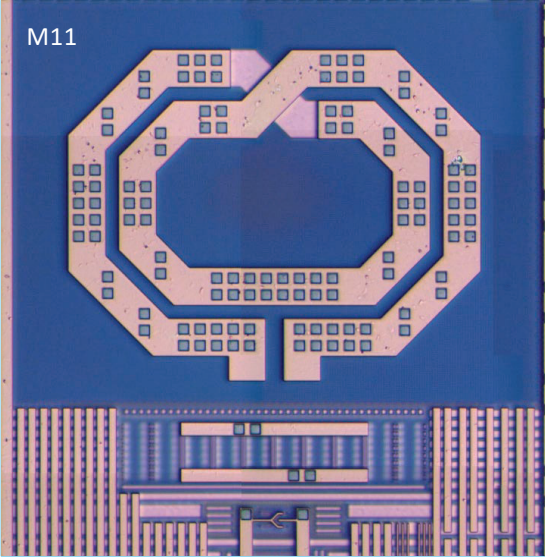
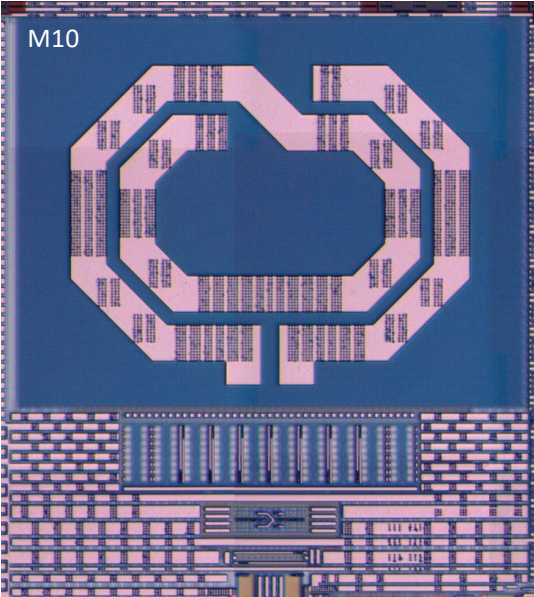
Semiconductor device with an exemplary inductor-capacitor (LC) resonant circuit (within the red box)

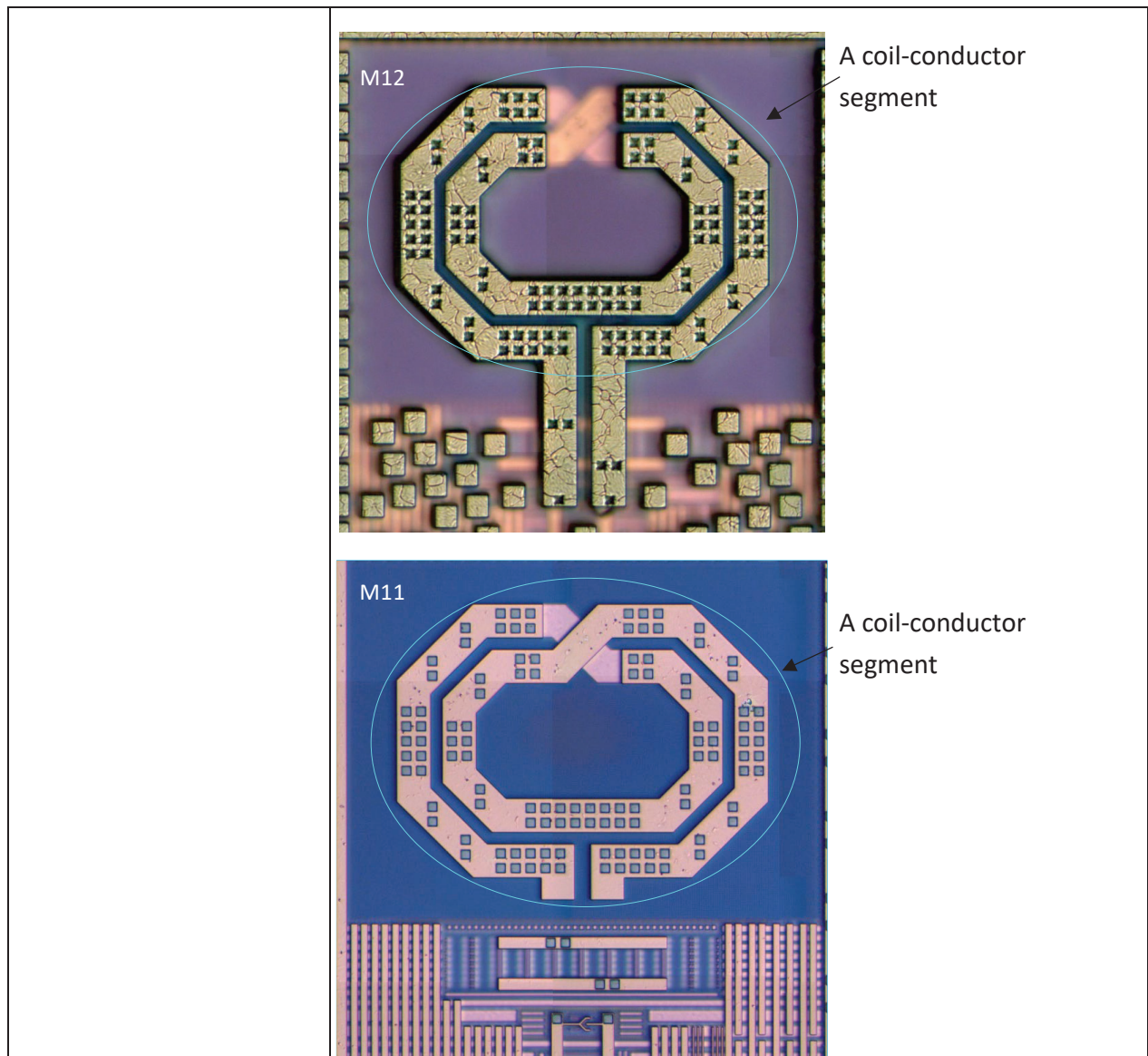
A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the AMD Radeon RX 6600 XT is depicted below:

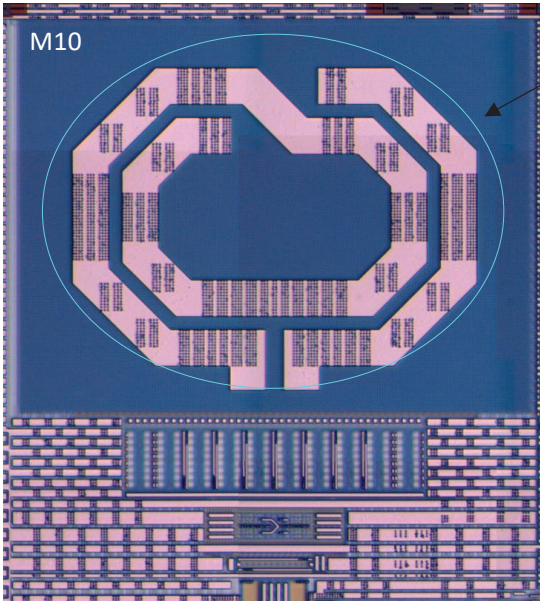
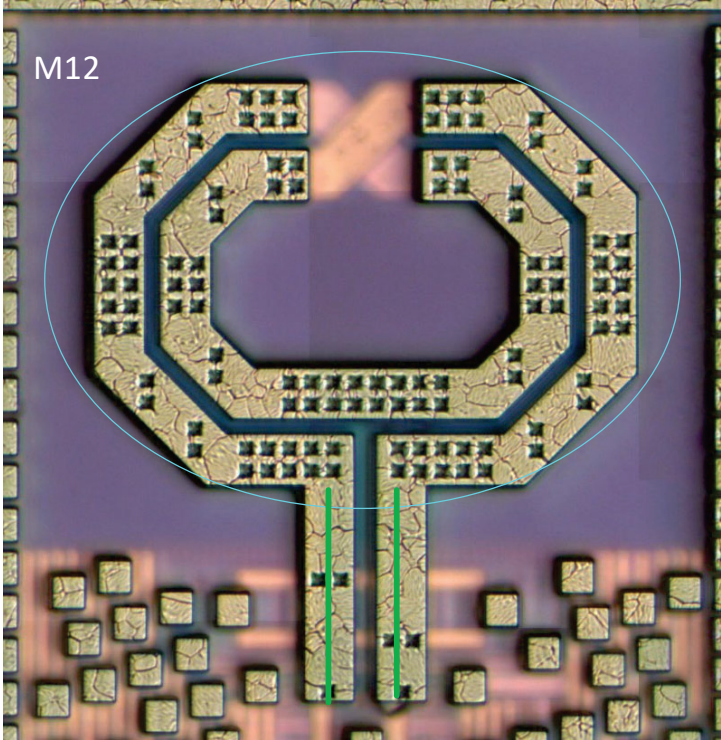


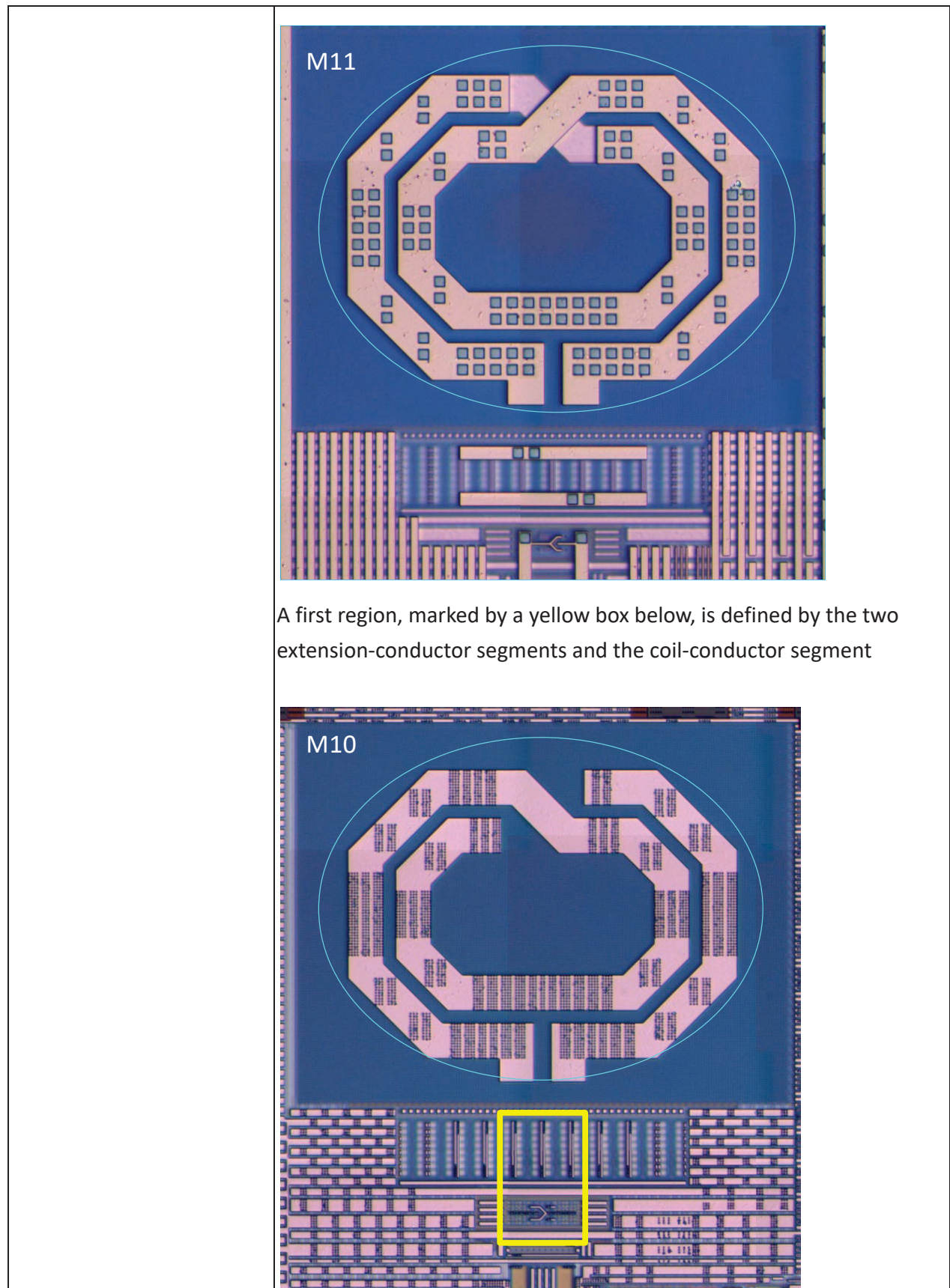
1(b): a first insulation layer;	 The figure consists of two scanning electron micrographs (SEMs) of a semiconductor device. The top image is a top-down view showing a central octagonal structure with a T-shaped extension, surrounded by a grid of small squares and rectangular patterns. The bottom image is a cross-sectional view showing layers M10, M11, and M12. An arrow points to a layer labeled 'A first insulation layer'.

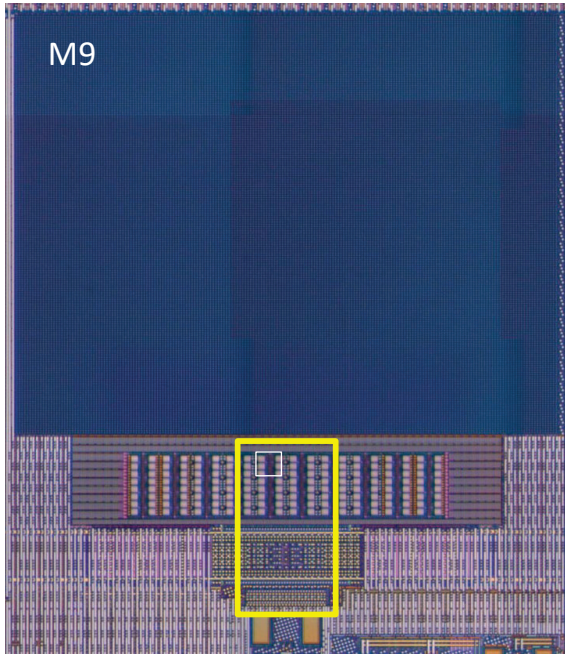
	 A first insulation layer is approximately located between the M10 and M9 metal layers.
1(c): an inductor component, comprising:	The semiconductor device with an inductor-capacitor (LC) resonant circuit comprises an inductor component, composed with at least three metal layers (M10-M12). 

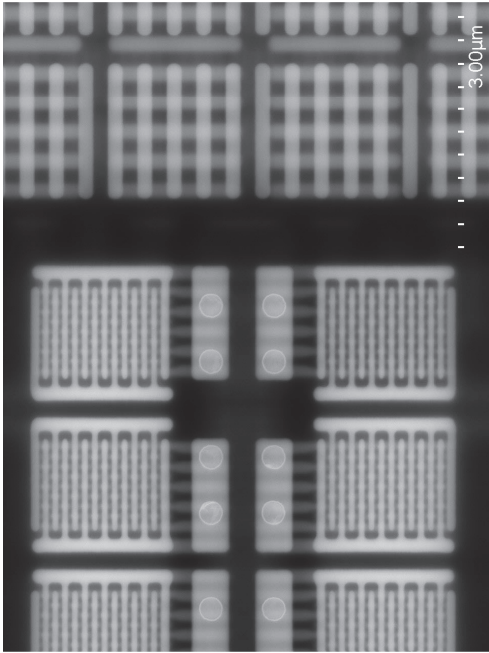
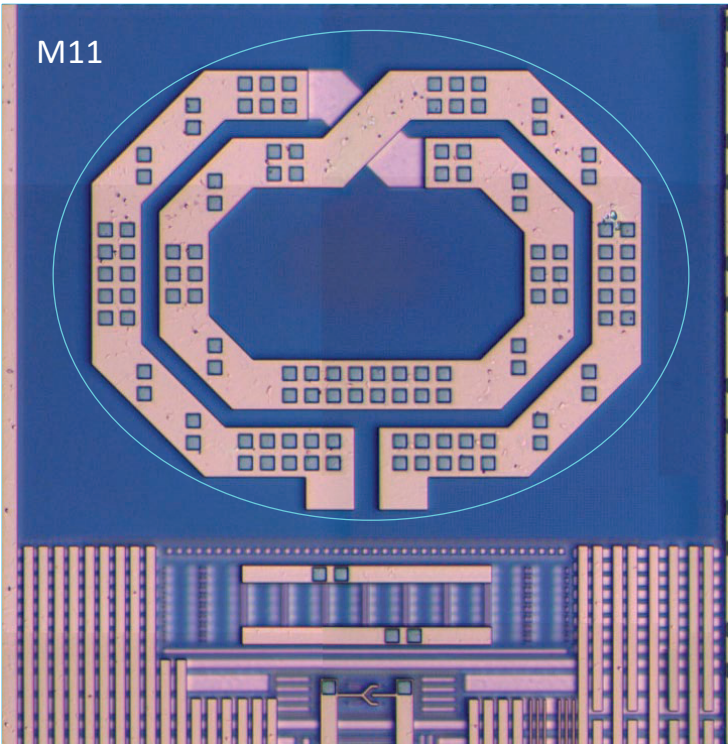
	 
1(d): a coil-conductor segment, located on a surface of the first insulation layer; and	The inductor component comprises a coil-conductor segment located on a surface of the first insulation layer. The multi-layer coil-conductor segment is marked, in the image below, by a light blue oval, and the image below also shows that the coil-conductor segment is located on a surface of the first insulation layer (which is located approximately below the M10 layer).



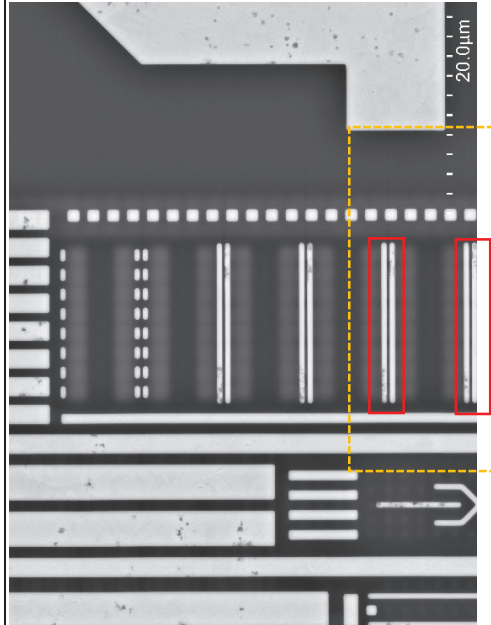
	 A coil-conductor segment
1(e): two extension-conductor segments, located on the surface of the first insulation layer, coupled to two ends of the coil-conductor segment respectively, arranged at an interval, and extending outwards relative to the coil-conductor segment respectively, wherein a first region is defined by the two extension-conductor segments and the coil-conductor segment; and	Two extension-conductor segments, marked by two green lines in the image below, located on the surface of the first insulation layer, are coupled to two ends of the coil-conductor segment respectively, arranged at an interval, and extend outwards relative to the coil-conductor segment. 



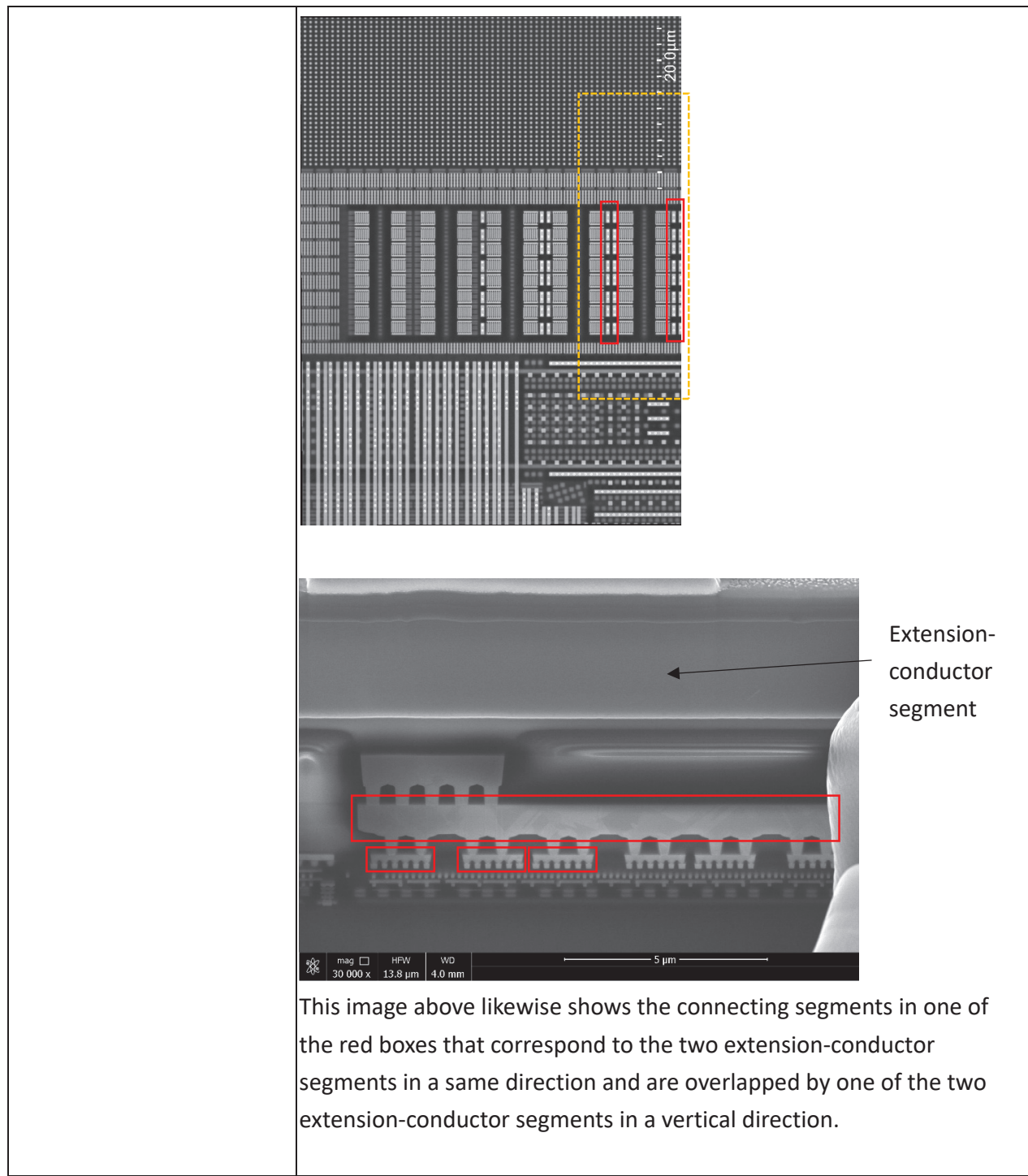
1(f): a capacitor component, arranged corresponding to the first region in an embedded manner on the other surface, opposite to the inductor component, of the first insulation layer, wherein the capacitor component is correspondingly configured outwards relative to the coil-conductor segment, and the capacitor component is not substantially overlapped with the coil-conductor segment,	 M9 A capacitor component (e.g. within the white box), arranged corresponding to the first region (yellow block) in an embedded manner on the other surface (i.e., in the M9 layer adjacent to the first insulation layer), opposite to the inductor component, of the first insulation layer. As show in the image above, the capacitor component is correspondingly configured outwards relative to the coil-conductor segment, and the capacitor component is not substantially overlapped with the coil-conductor segment. The SEM image of the white block shows a partial portion of the capacitor component.
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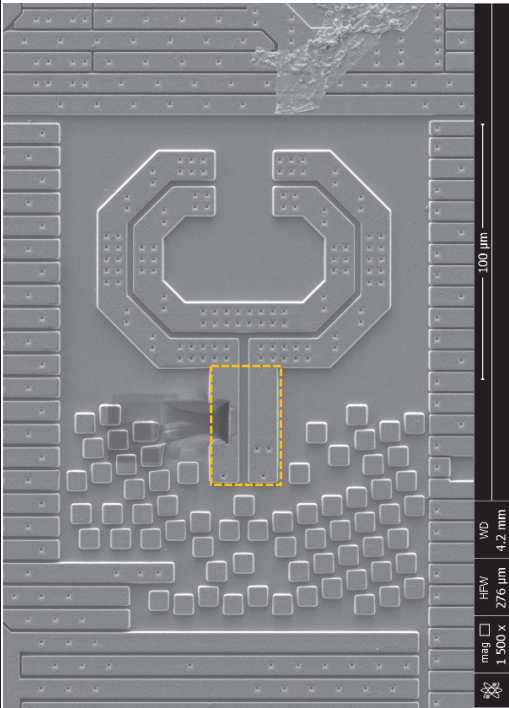
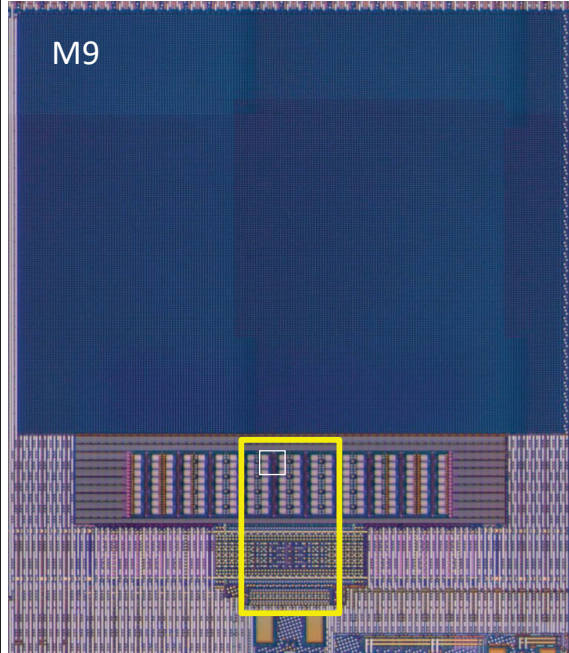
	
1(g): wherein the capacitor component comprises: a plurality of connecting segments, extending corresponding to the two extension-conductor segments in a same direction, wherein the plurality of connecting segments are respectively overlapped with the two extension-conductor segments in a vertical direction; and	 The plurality of connecting segments limitation is satisfied in several ways. The connecting segments in the red boxes below correspond to the two extension-conductor segments in a same direction and are

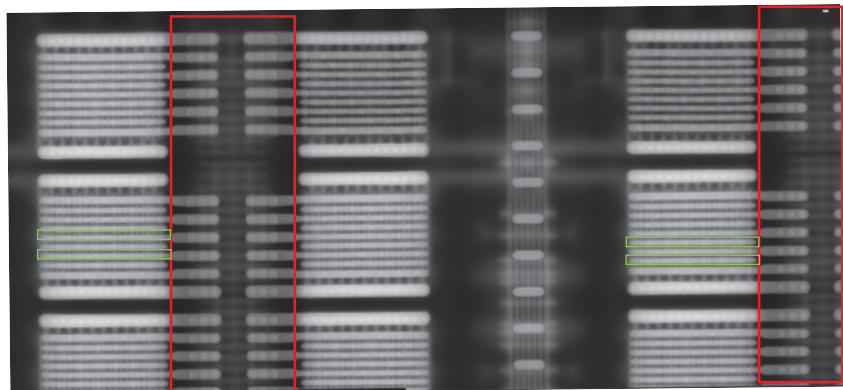
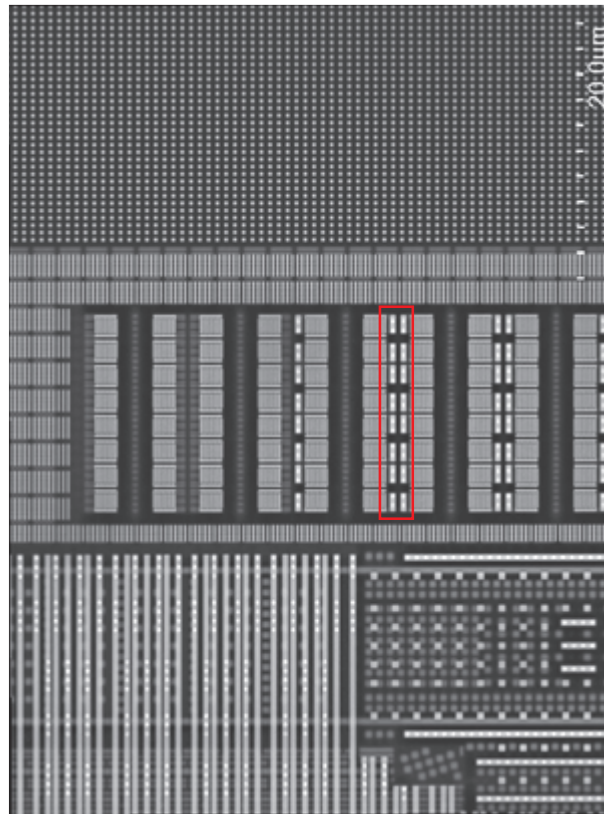
overlapped by the two extension-conductor segments in a vertical direction, with one extension-conductor segment identified in the image below in approximately the location of the dashed box:



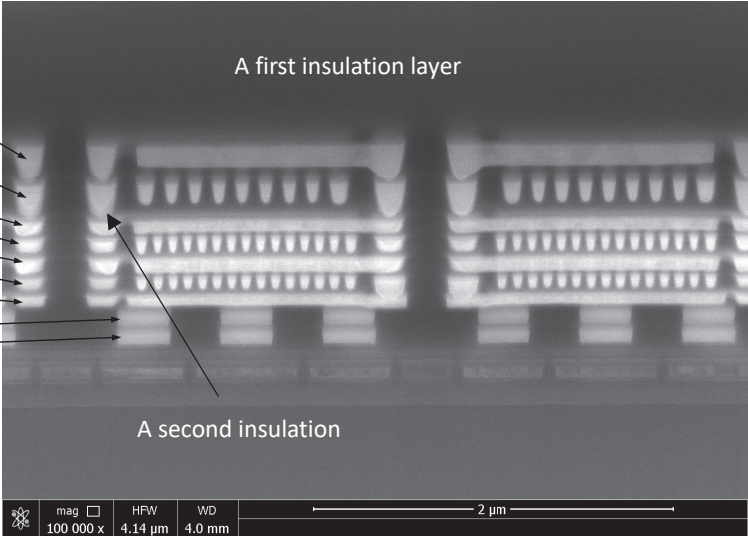
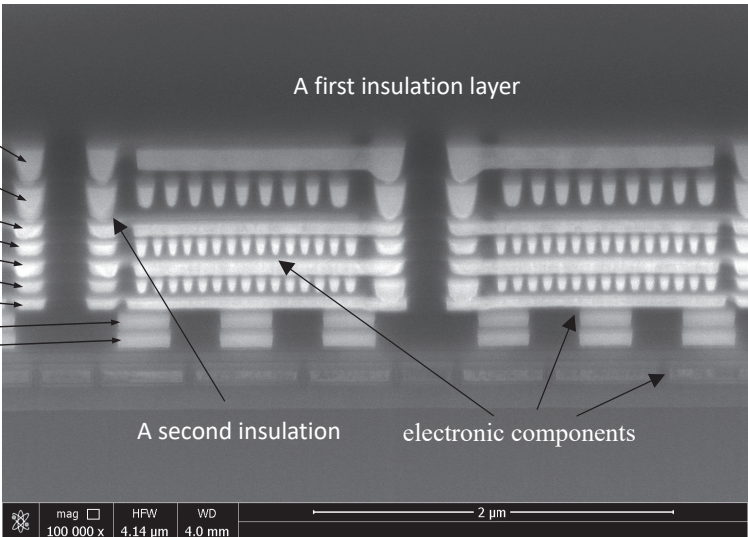
In addition, there are smaller connecting segments in the red boxes below that correspond to the two extension-conductor segments in a same direction and are overlapped by the two extension-conductor segments in a vertical direction. The location of one extension-conductor segment is identified below in approximately the location of the dashed box:



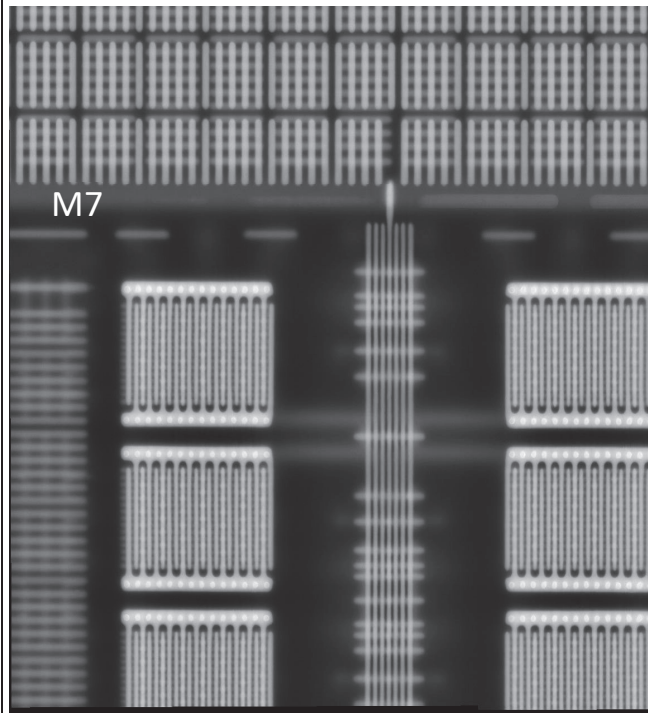
	 The plan view above again shows that the various categories of connecting segments are respectively overlapped with the two extension-conductor segments (within the dashed box above) in a vertical direction.
1(h): a plurality of electrode segments, located below the first region, wherein one end of each of the plurality of electrode segments is coupled to one of the plurality of connecting segments, and each of the plurality of electrode segments extends laterally relative to the respective coupled connecting segment of the plurality of connecting segments.	 A plurality of electrode segments (in the white box) is located below the first region (yellow block)



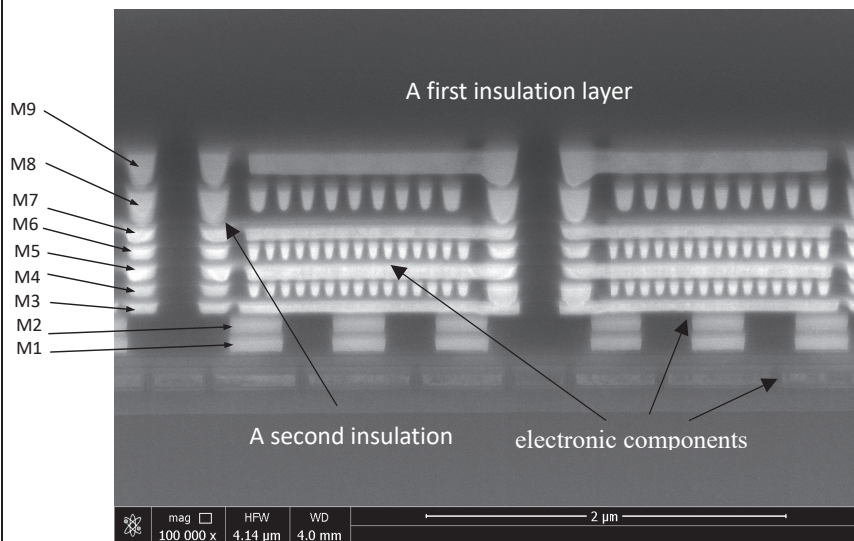
One end of each of the plurality of electrode segments (green boxes) is coupled to one of the plurality of connecting segments (red boxes), and each of the plurality of electrode segments extends laterally relative to the respective coupled connecting segment of the plurality of connecting segments.

2(a): The semiconductor device with an LC resonant circuit according to claim 1, further comprising: a second insulation layer, wherein the capacitor component is sandwiched between the first insulation layer and the second insulation layer; and	 A first insulation layer M9 M8 M7 M6 M5 M4 M3 M2 M1 A second insulation mag 100 000 x HFW 4.14 μm WD 4.0 mm 2 μm An exemplary second insulation layer is located between M8 and M7, wherein the capacitor component is sandwiched between the first insulation layer (located between M9 and M10) and the second insulation layer (between M8 and M7).
2(b): an electronic component, arranged corresponding to the first region in an embedded manner on a surface, opposite to the capacitor component, of the second insulation layer.	 A first insulation layer M9 M8 M7 M6 M5 M4 M3 M2 M1 A second insulation electronic components mag 100 000 x HFW 4.14 μm WD 4.0 mm 2 μm Electronic components arranged corresponding to the first region in an embedded manner on a surface, opposite to the capacitor component, of the second insulation layer.
3. The semiconductor device with an LC resonant circuit according to claim 2, wherein the electronic component is one of	

another capacitor component, a transistor component, a diode component, and a resistor component.

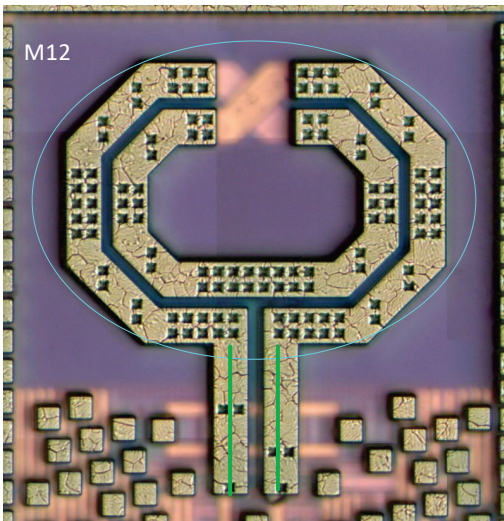
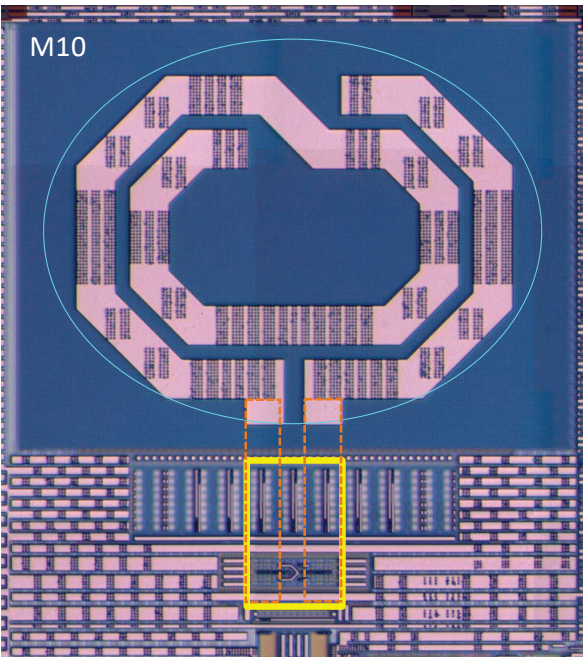


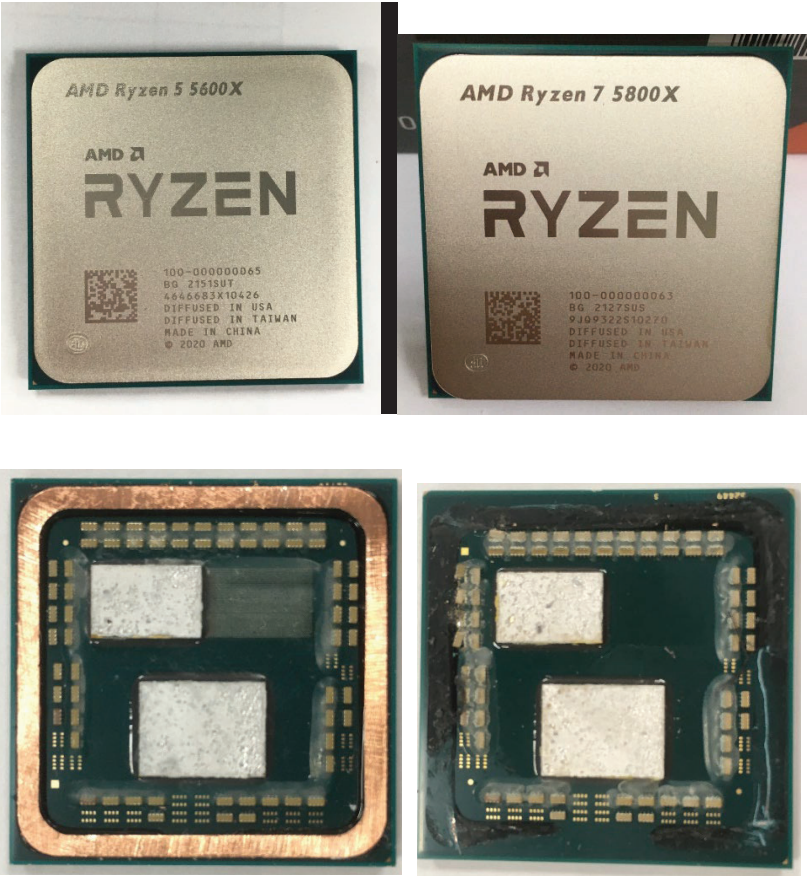
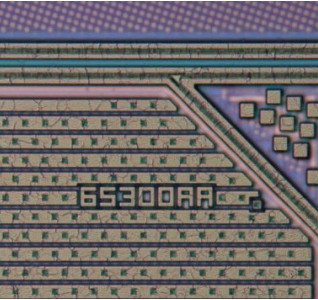
(Depicting a capacitor)

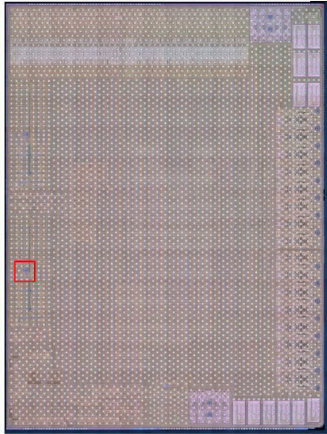
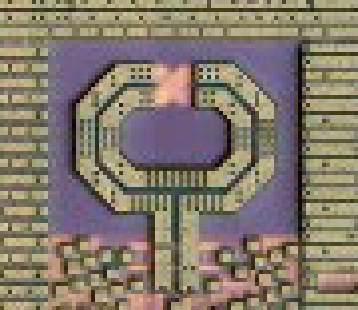
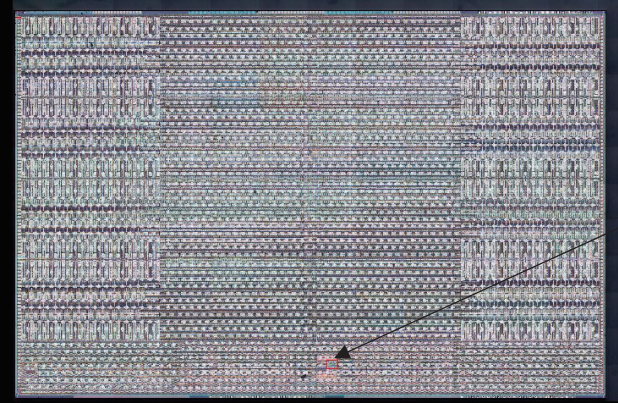


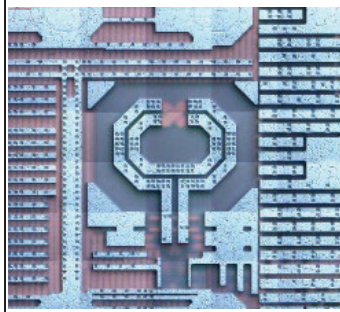
As shown in the images above, the electronic components (lower than M8 and the second insulator layer) are one of another capacitor component, a transistor component, a diode component, and a resistor component.

4. The semiconductor device with an LC resonant circuit according to claim 1,

wherein the first region is defined between the two extension-conductor segments.	  The first region (yellow block) is defined between the two extension-conductor segments (shown with the green lines and dashed orange boxes, respectively, in the images above).
9(a): A semiconductor device with an inductor-capacitor (LC) resonant circuit, comprising:	The Accused Products include a semiconductor device with an inductor-capacitor (LC) resonant circuit, at least as reflected below: AMD Ryzen5 5600X and AMD Ryzen7 5800X Each of the AMD Ryzen5 5600X and AMD Ryzen7 5800X comprises a Client IO die and a compute core as shown in the images below:

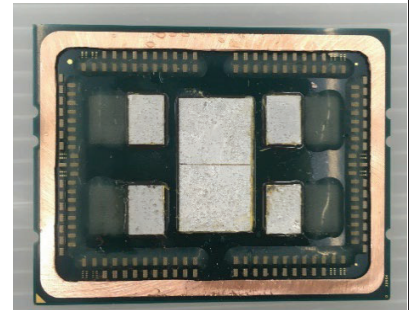
	 A serial number is shown on the Client IO die, as depicted below, and on information and belief, many AMD products contain the same, or substantially similar, Client IO dies. Such Client IO dies comprise the claimed semiconductor device with an inductor-capacitor (LC) resonant circuit:  The semiconductor device with an inductor-capacitor (LC) resonant circuit in the exemplary Client IO die is marked by a red box shown in the image below:
--	--

	 A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the exemplary Client IO die is depicted below:  In addition, the compute cores of the AMD Ryzen5 5600X and AMD Ryzen7 5800X, and similar AMD products, comprise a semiconductor device with an inductor-capacitor (LC) resonant circuit. The location of the exemplary semiconductor device with an exemplary inductor-capacitor (LC) resonant circuit in the exemplary compute core is marked with a red box in the image below.  Semiconductor device with an exemplary inductor-capacitor (LC) A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the compute core is depicted below:
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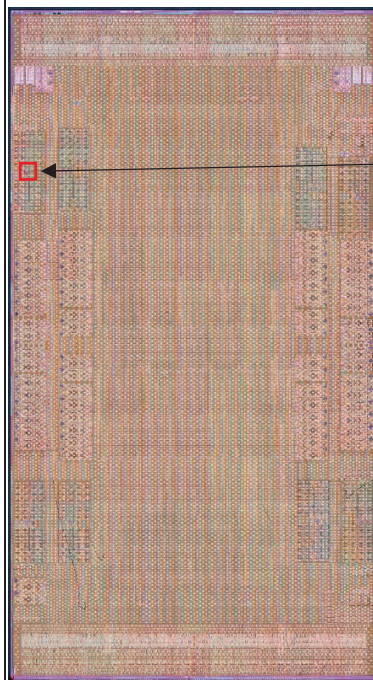


AMD Ryzen Threadripper 3960X

The AMD Ryzen Threadripper 3960X comprises a Server IO die and four compute cores, as shown in the pictures below.

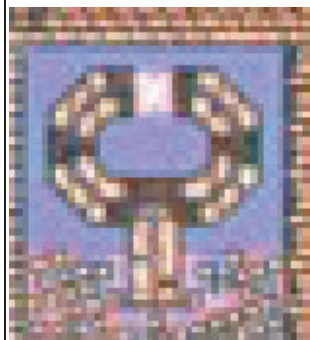


The Server IO die of the AMD Ryzen Threadripper 3960X comprises a semiconductor device with an inductor-capacitor (LC) resonant circuit, which is marked by the red box shown below:



Semiconductor device with an exemplary Inductor-capacitor (LC) resonant circuit

A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the Server IO die is depicted below:

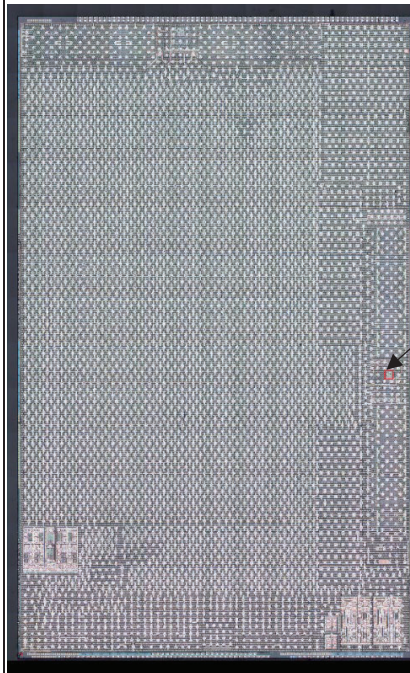


AMD Radeon RX 6500 XT / RX 6600 XT

The AMD Radeon RX 6500 XT (which, on information and belief, also represents other, substantially similar products, including at least the Radeon RX 6600 XT) comprises one die, as shown in the picture below.

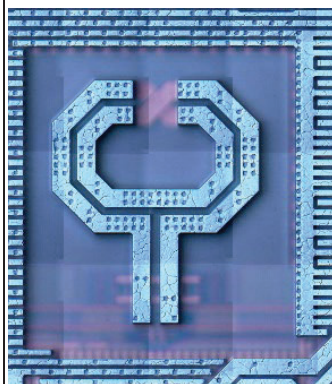


A semiconductor device with an inductor-capacitor (LC) resonant circuit in AMD Radeon RX 6500 XT is marked by a red box below:

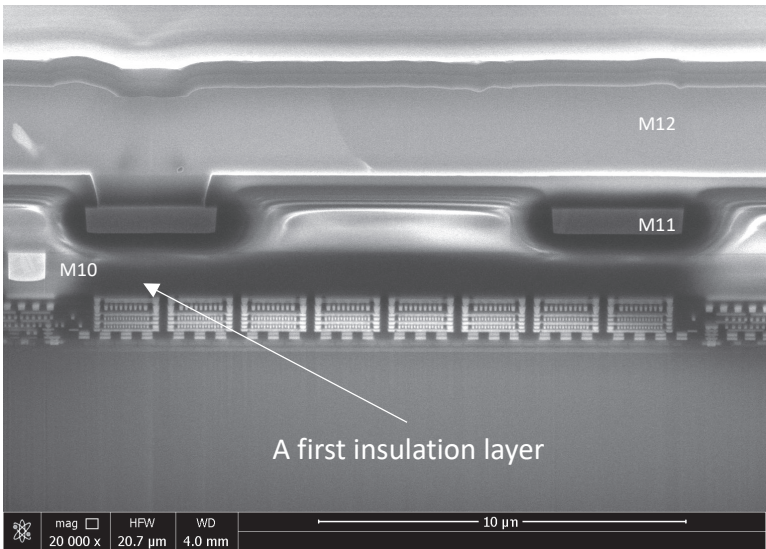
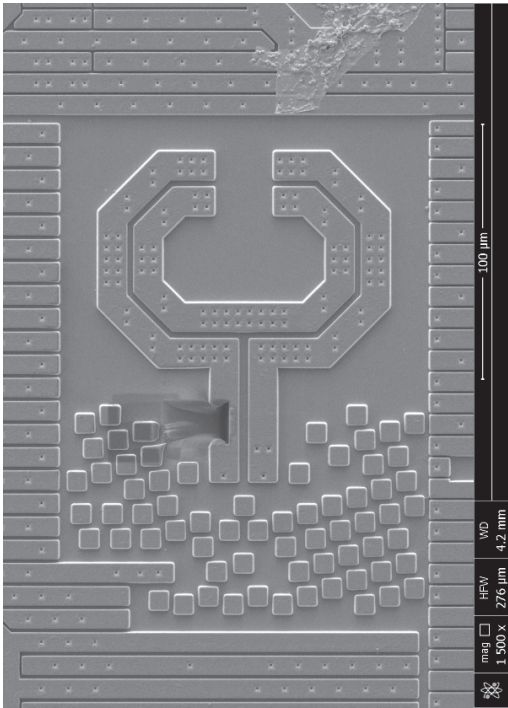


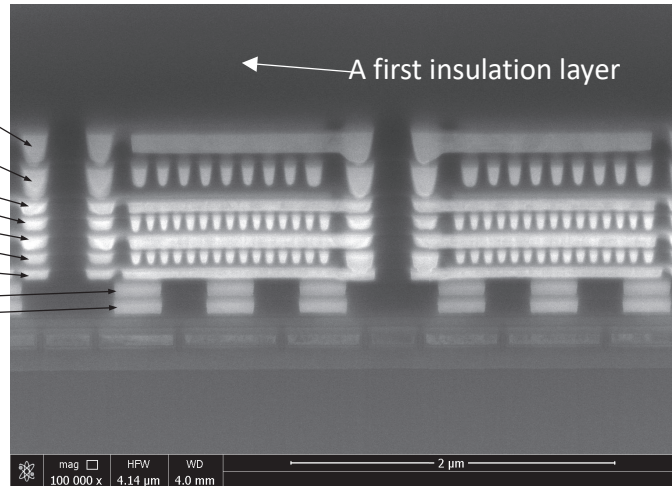
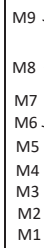
Semiconductor device with an exemplary inductor-capacitor (LC) resonant circuit (within the red box)

A magnified image of the semiconductor device with an inductor-capacitor (LC) resonant circuit in the AMD Radeon RX 6500 XT is depicted below:



9(b): a first insulation layer;

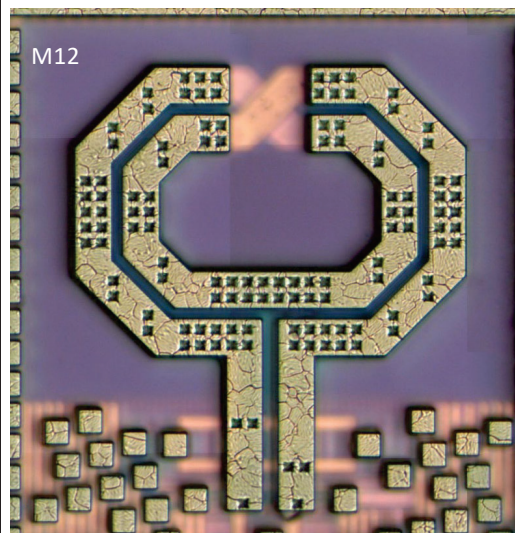


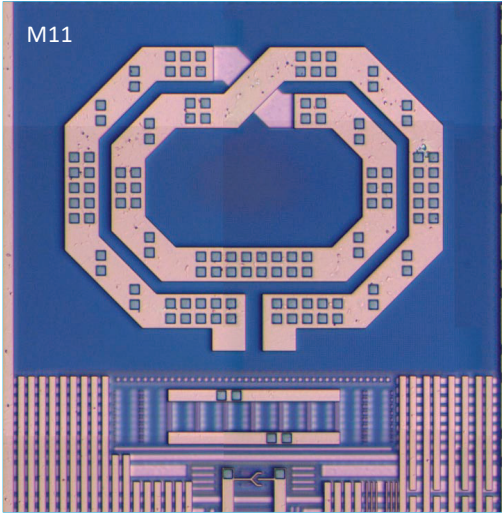
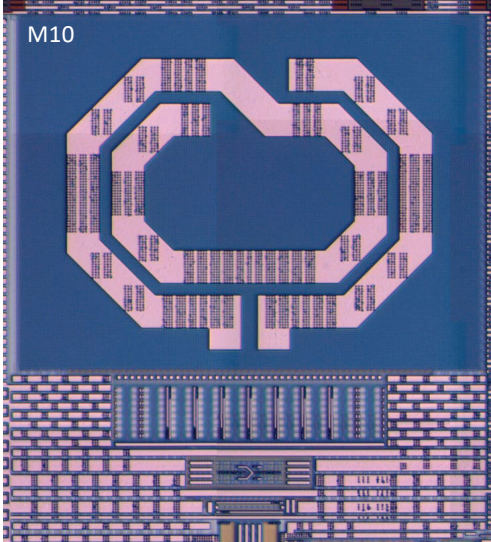


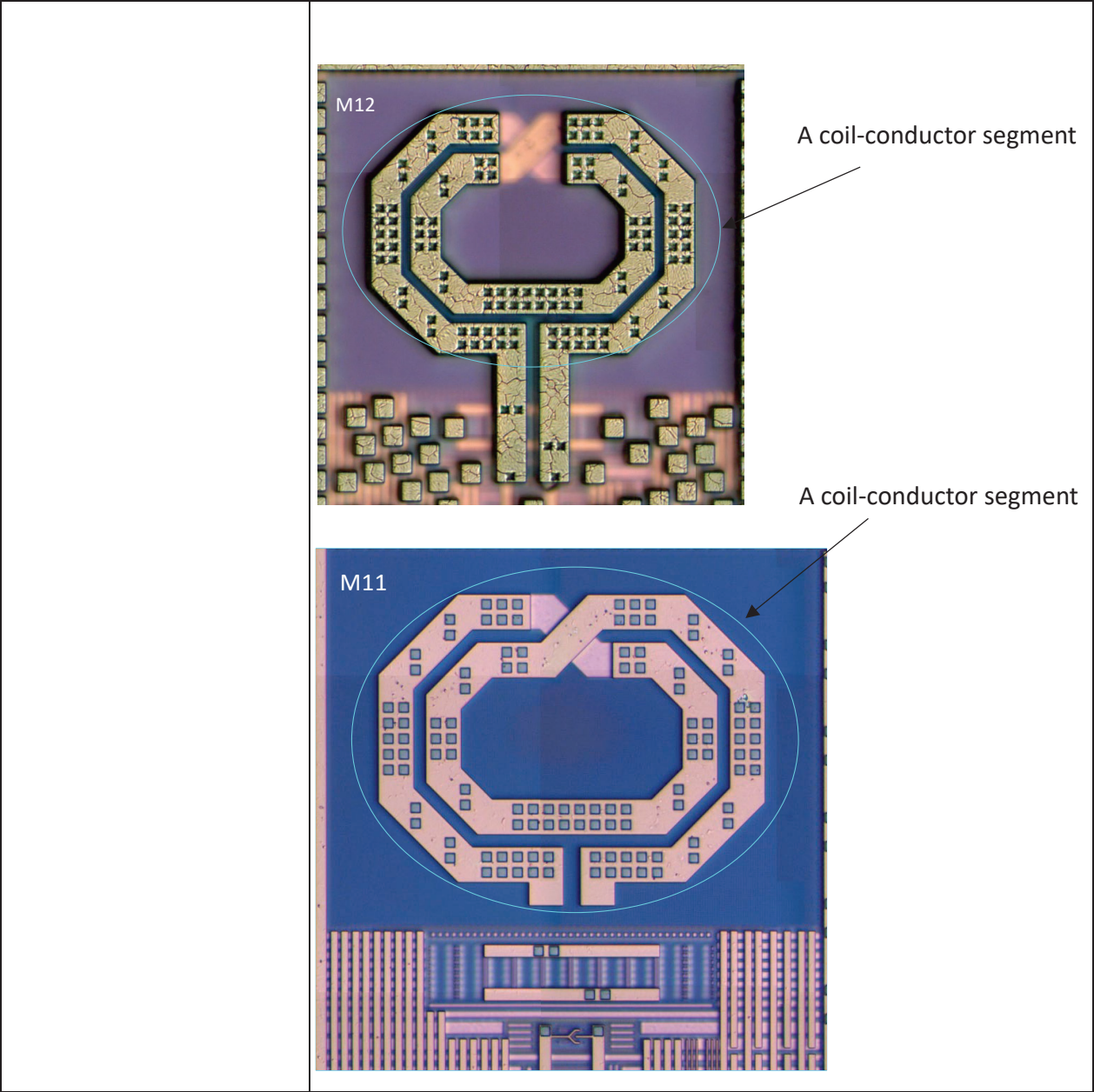
A first insulation layer is located approximately between M10 and M9.

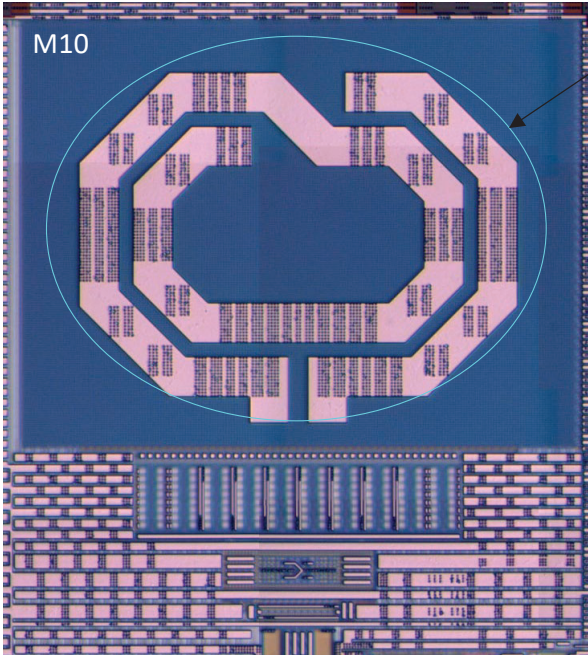
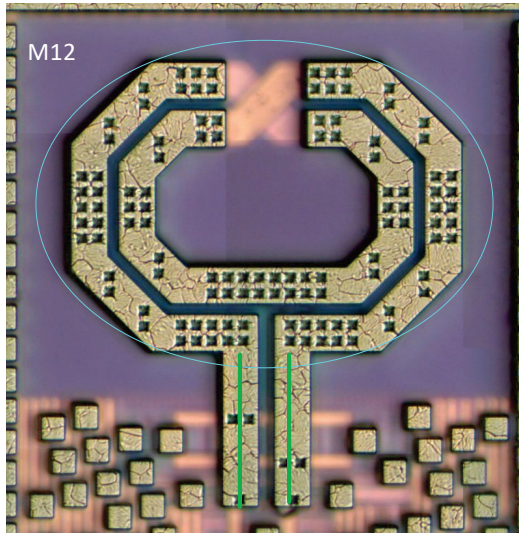
9(c): an inductor component, comprising:

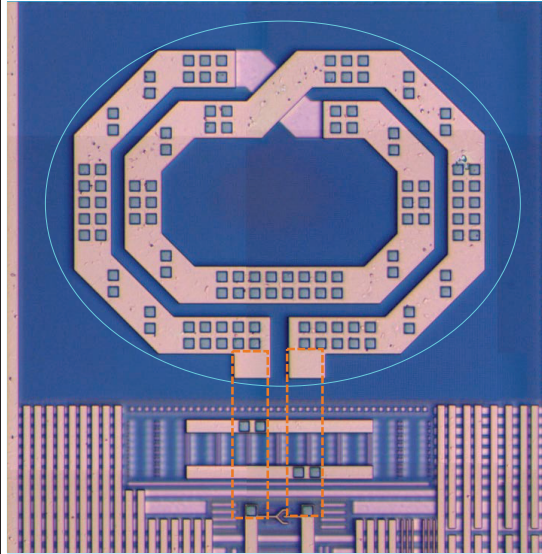
The semiconductor device with an inductor-capacitor (LC) resonant circuit comprises an inductor component, composed with at least three metal layers (M10-M12)



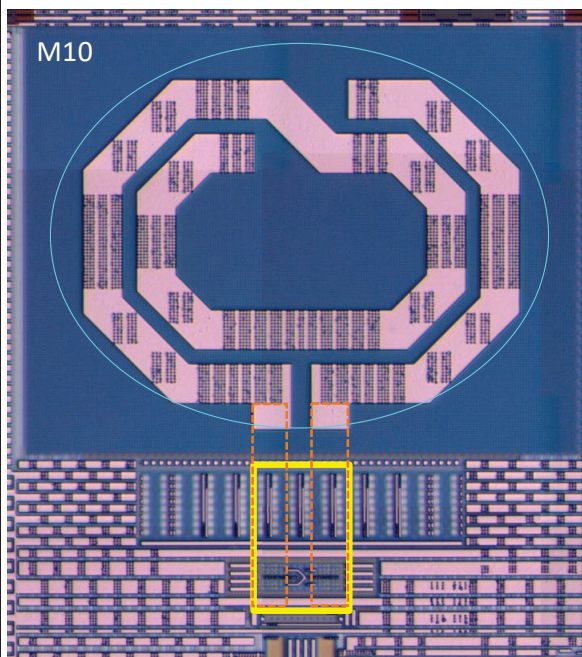
	 
9(d): a coil-conductor segment, located on a surface of the first insulation layer; and	The inductor component comprises a coil-conductor segment located on a surface of the first insulation layer. The three-layer coil-conductor segment is marked, in the image below, by a light blue oval, and the image below also shows that the coil-conductor segment is located on a surface of the first insulation layer.

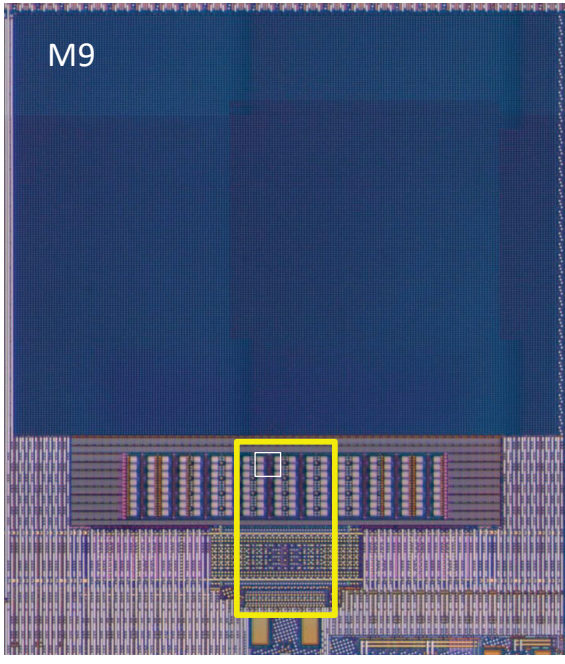


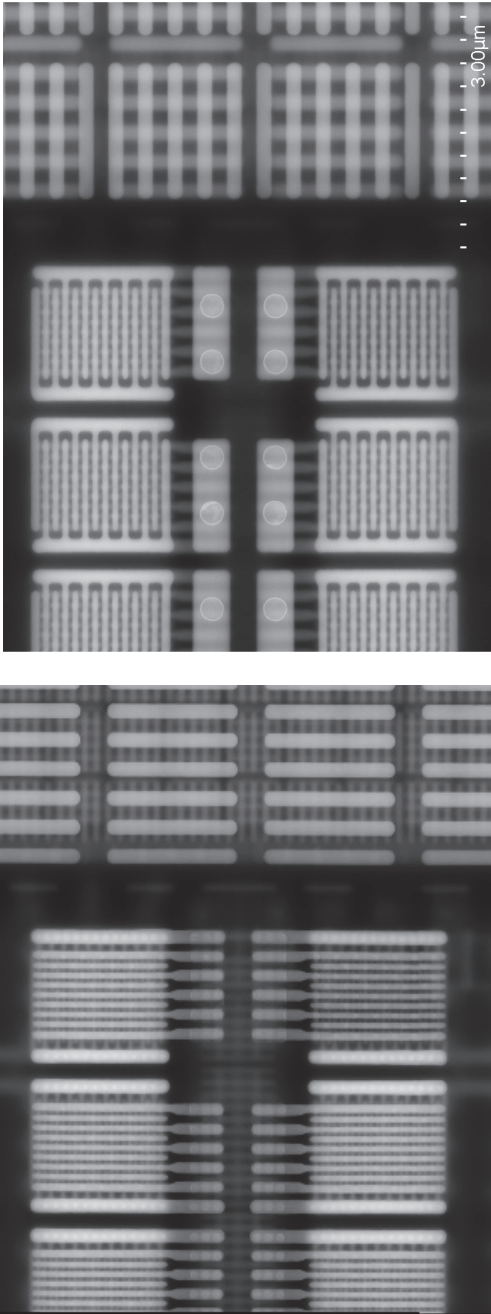
	Micrograph M10 shows a top-down view of a microchip. A central, dark, octagonal-shaped conductor is surrounded by a lighter-colored, patterned region. A blue circle highlights a specific area of this patterned region, which is identified as a coil-conductor segment. An arrow points from the text 'A coil-conductor segment' to this highlighted area. A coil-conductor segment
9(e): two extension-conductor segments, located on the surface of the first insulation layer, coupled to two ends of the coil-conductor segment respectively, arranged at an interval, and extending outwards relative to the coil-conductor segment wherein a first region is defined by the two extension-conductor segments and the coil-conductor segment; and	Two extension-conductor segments, marked by two green lines in the image below, located on the surface of the first insulation layer, are coupled to two ends of the coil-conductor segment respectively, arranged at an interval, and extend outwards relative to the coil-conductor segment: Micrograph M12 shows a top-down view of a microchip. A central, dark, octagonal-shaped conductor is surrounded by a lighter-colored, patterned region. Two green lines highlight two extension-conductor segments that are coupled to the two ends of the coil-conductor segment. These segments extend outwards relative to the coil-conductor segment.

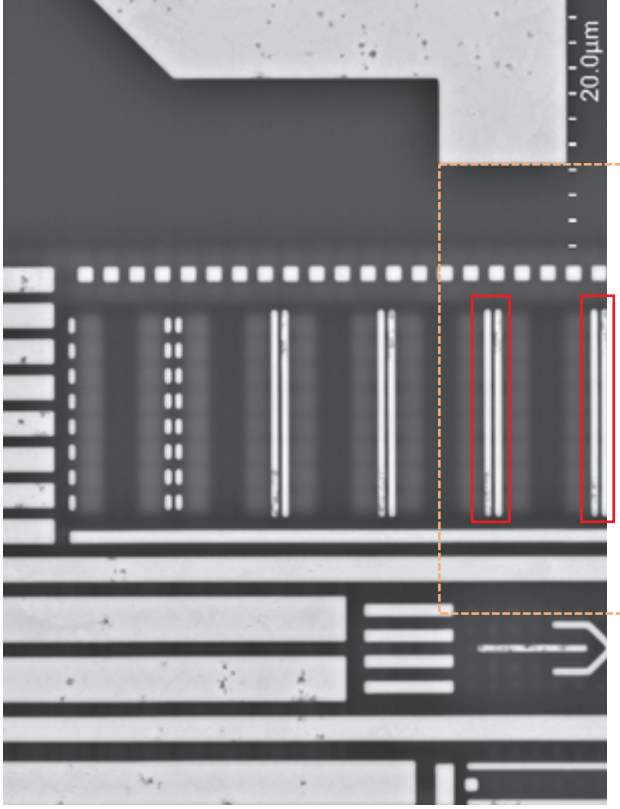


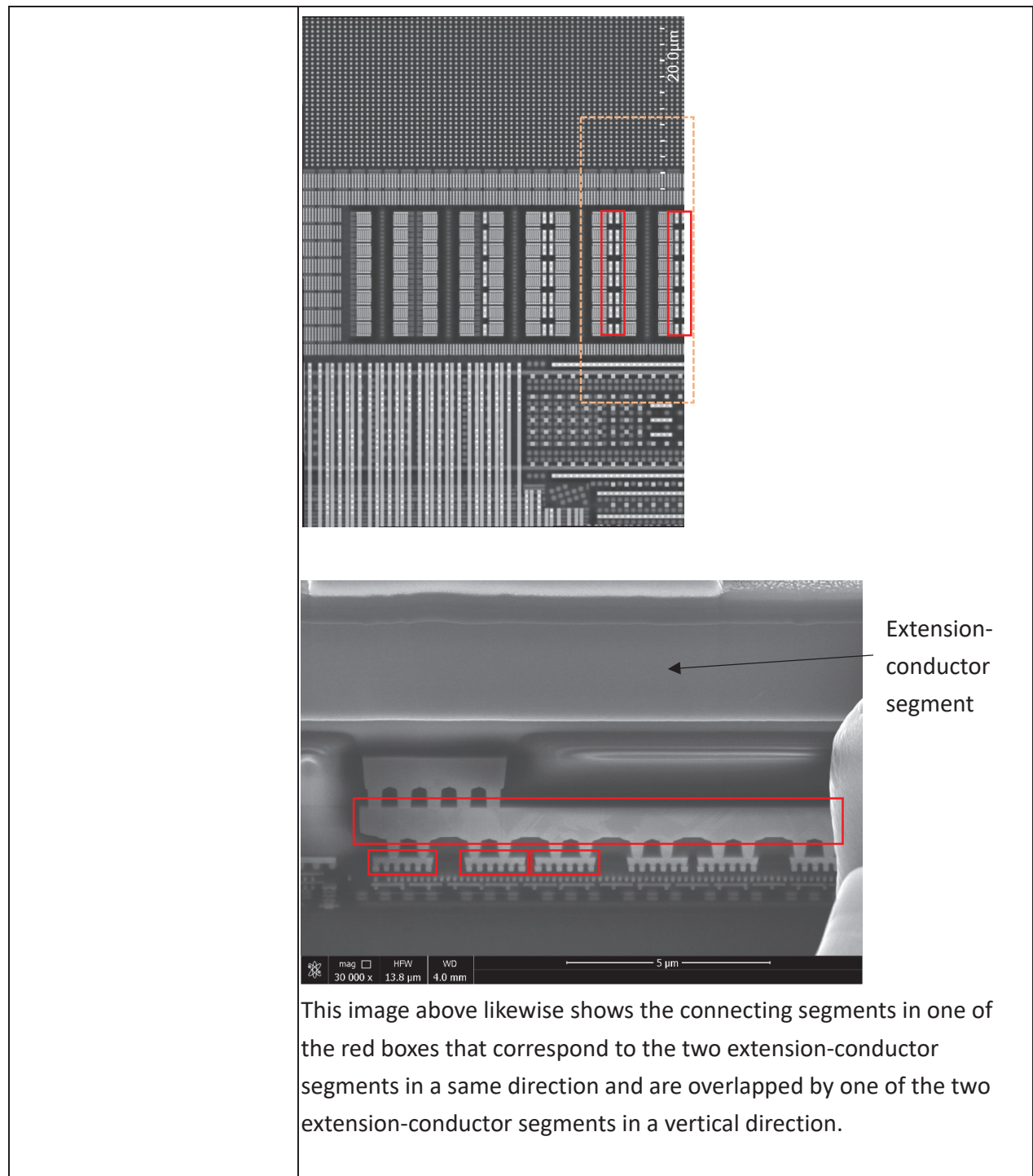
A first region, marked by a yellow box below, is defined by the two extension-conductor segments and the coil-conductor segment

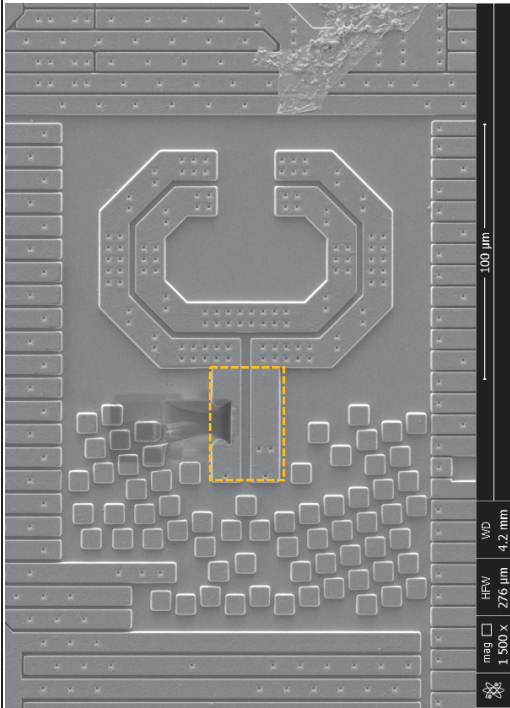
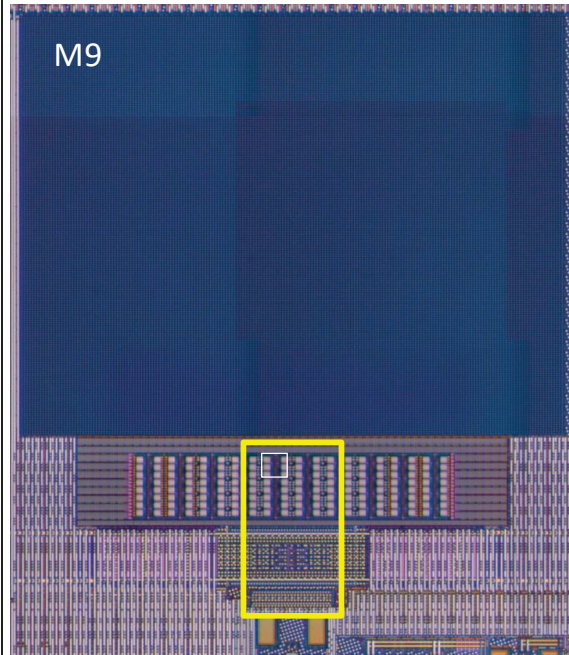


9(f): a capacitor component, arranged corresponding to the first region in an embedded manner on the other surface, opposite to the inductor component, of the first insulation layer, wherein the capacitor component further comprises:	 A capacitor component (e.g. within the white box), arranged corresponding to the first region (yellow block) in an embedded manner on the other surface (M9), opposite to the inductor component, of the first insulation layer. As show in the image above, the capacitor component is correspondingly configured outwards relative to the coil-conductor segment, and the capacitor component is not substantially overlapped with the coil-conductor segment. The SEM image of the white block shows a partial portion of the capacitor component.
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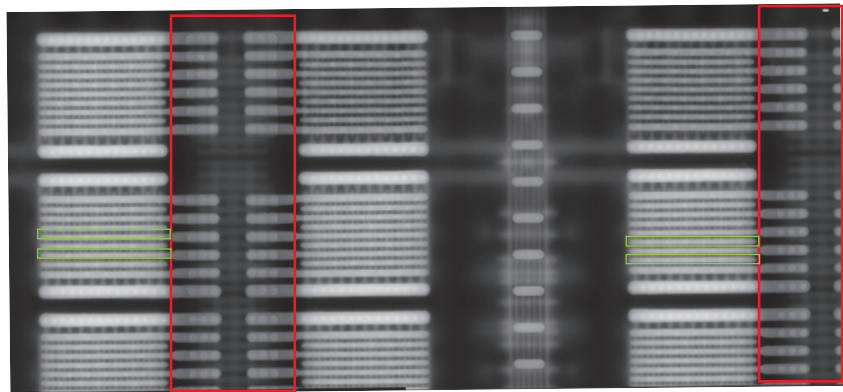
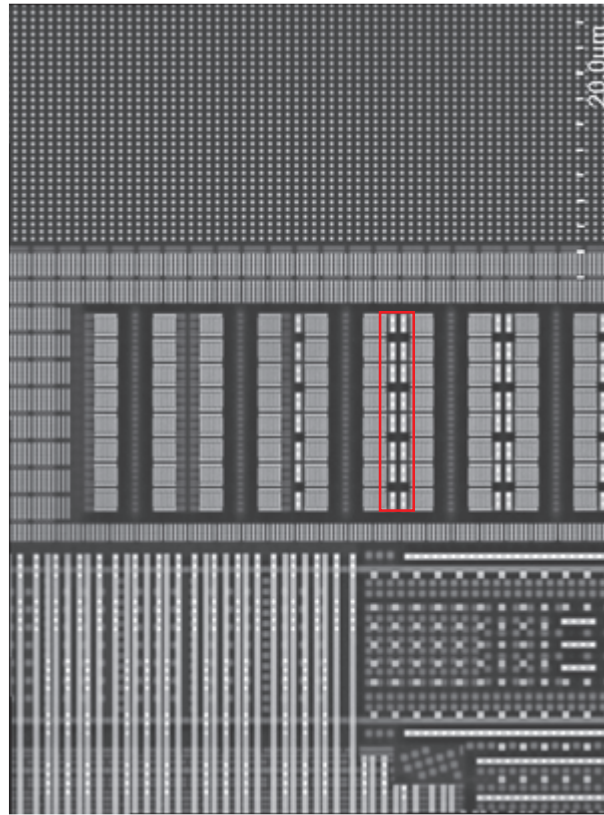
	
9(g): a plurality of connecting segments, extending corresponding to the two extension-conductor segments in a same direction, wherein the plurality of connecting segments are respectively overlapped with the two	The plurality of connecting segments limitation is satisfied in several ways. The connecting segments in the red boxes below correspond to the two extension-conductor segments in a same direction and are overlapped by the two extension-conductor segments in a vertical direction, with one of the extension-conductor segments identified in the image below in approximately the location of the dashed box:

extension-conductor segments in a vertical direction; and	 In addition, there are smaller connecting segments in the red boxes below that correspond to the two extension-conductor segments in a same direction and are overlapped by the two extension-conductor segments in a vertical direction. The location of one extension-conductor segment is identified below in approximately the location of the dashed box:
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	 The plan view above again shows that the various categories of connecting segments are respectively overlapped with the two extension-conductor segments (within the dashed box above) in a vertical direction.
9(h): a plurality of electrode segments, located below the first region, wherein one end of each of the plurality of electrode segments is coupled to one of the plurality of connecting segments, and each of the plurality of electrode segments extends laterally relative to the respective coupled connecting segment of the plurality of connecting segments.	

A plurality of electrode segments (in the white box) is located below the first region (yellow block)



One end of each of the plurality of electrode segments (green boxes) is coupled to one of the plurality of connecting segments (red boxes), and each of the plurality of electrode segments extends laterally relative to the respective coupled connecting segment of the plurality of connecting segments.