

## SEARCH HISTORY

<b>Application Number</b>	PCT/US 18/48623
<b>Search Conducted By</b>	TCT
<b>Search Approved By</b>	SV

<b>CPC/IPC Classifications Searched</b>	IPC - H01L2 1/673 (2018.01) CPC - H01L 21/67373, H01L2 1/67379, H01L2 1/67772
<b>Date Conducted</b>	10 December 2018 – 10 December 2018 (10.12.2018 – 10.12.2018)

<b>Documentation Searched</b>	CPC - H01L 21/67373, H01L2 1/67379, H01L2 1/67772
<b>Search Terms Used</b>	semiconductor wafer separator, semiconductor wafer, semiconductor, wafer, separator, interleaver, ring, circle, circular, ring, edge, wall, space, spacing, gap, void, interlock, nesting, stacking, protrusion, recess, notch, opening, coplanar, even, flat, flush, level, polyethylene, right-angle, 90 degree, carry, carrier
<b>Date Conducted</b>	10 December 2018 – 10 December 2018 (10.12.2018 – 10.12.2018)

<b>Electronic Database Searched</b>	PatBase
<b>Files Searched</b>	Full-text: AU BE BR CA CH CN DE DK EP ES FI FR GB IN JP KR SE TH TW US WO Bibliographic: (Europe) AT BA BE BG CH CS CY CZ DD DK EE ES FI GE GR HR HU IE IS IT LT LU LV MC MD MT NL NO PL PT RO RS SE SI SK SM TR UA YU (Asia) EA GC HK ID IL IN KZ MN MY PH RU SG SU TH TJ TW UZ VN (North America) CA CR CU DO GT HN MX NI PA SV TT (South America) AR BR CL CO EC PE UY (Australasia) AU NZ (Africa) AP DZ EG KE MA MW OA ZA ZM ZW
<b>Date Conducted</b>	10 December 2018 – 10 December 2018 (10.12.2018 – 10.12.2018)

## Search Logic:

## Classification-Based Search

1) IC = (H01L21/673) (11687)

- 2) CPC = (H01L21/67373 OR H01L21/67379 OR H01L21/67772) (1606)
- 3) 1 OR 2 (12565)
- 4) 3 and SP = ((semiconductor% NEAR wafer%) AND (separat\* OR interlea\*)) (469)
- 5) 4 and FT = (ring% OR circle OR circular) (262)
- 6) 5 and FT = (edge% AND wall%) (126)
- 7) 6 and FT = (space% OR spacing OR gap% OR void%) (121)
- 8) 7 and FT = (interlock\* OR nest\* OR stack\*) (66)
- 9) 8 and SP = (protru\* AND (recess\* OR notch\* OR opening%)) (17)
- 10) 9 and FT = (coplanar OR even OR flat OR flush OR level) (15)
- 11) 10 and FT = (polyethylene) (4)

**Keyword-Based Search**

- 12) FT = "semiconductor% wafer% separator%" (3)
- 13) SP = (("semiconductor% wafer%") NEAR (separat\* OR interlea\*)) (3666)
- 14) 13 and FT = (ring% OR circle OR circular) (1575)
- 15) 14 and (edge% AND wall%) (366)
- 16) 15 and FT = (space% OR spacing OR gap% OR void%) (324)
- 17) 16 and FT = (interlock\* OR nest\* OR stack\*) (175)
- 18) 17 and SP = (protru\* AND (recess\* OR notch\* OR opening%)) (29)
- 19) 18 and FT = (coplanar OR even OR flat OR flush OR level) (28)
- 20) 19 and FT = polyethylene (5)
- 21) 20 NOT 11 (4)
- 22) SP = ((semiconductor% NEAR wafer%) AND (separat\* OR interlea\*)) (21814)
- 23) 22 and FT = (interlock\* OR nest\* OR stack\*) (7112)
- 24) 23 and FT = (ring% OR circle OR circular) (3253)
- 25) 24 and FT = (space% OR spacing OR gap% OR void%) (2774)
- 26) 25 and SP = (protru\* AND (recess\* OR notch\* OR opening%)) (354)
- 27) 26 and FT = ("right angle%" OR "90 degree%") (120)
- 28) 27 and FT = (coplanar OR even OR flat OR flush OR level) (120)
- 29) 28 and FT = (carry OR carrie\*) (104)
- 30) 29 and FT = (polyethylene) (14)
- 31) 30 NOT 21 (10)

**Forward/Backward Search**

- 32) PN = (US20160365265 OR US20170178937 OR WO2016084882 OR US20140076774) (4)
- 33) CTB 32 and CTF 32 (1)

<b>Electronic Database Searched</b>	Google
<b>Files Searched</b>	Google Scholar (Articles excluding patents)
<b>Date Conducted</b>	10 December 2018 – 10 December 2018 (10.12.2018 – 10.12.2018)
<b>Search Logic:</b>	
"semiconductor wafer separator" No Results	

semiconductor wafer separator circular top bottom gap interlock notch gap protrusion  
About 109 Results

semiconductor wafer separator circular top bottom gap interlock notch gap recess protrusion stack polyethylene  
3 Results

semiconductor wafer separator circular cover ("right-angle" OR "90 Degrees") stack (even OR flush OR coplanar)  
About 771 Results

semiconductor wafer separator circular cover ("right-angle" OR "90 Degrees") stack (even OR flush OR coplanar) carry protect gap  
About 368 Results

semiconductor wafer separator circular cover ("right-angle" OR "90 Degrees") stack (even OR flush OR coplanar) carry protect gap polyethylene  
About 56 Results

<b>Electronic Database Searched</b>	Google
<b>Files Searched</b>	Google Patents
<b>Date Conducted</b>	10 December 2018 – 10 December 2018 (10.12.2018 – 10.12.2018)
<b>Search Logic:</b>	

semiconductor wafer separator circular top bottom gap  
About 28,768 Results

semiconductor wafer separator circular top bottom gap interlock notch gap protrusion  
About 393 Results

semiconductor wafer separator circular top bottom gap interlock notch gap recess protrusion stack  
About 129 Results

semiconductor wafer separator circular top bottom gap interlock notch gap recess protrusion stack polyethylene  
About 49 Results

semiconductor wafer separator circular top bottom gap interlock notch gap recess protrusion stack polyethylene remove protective substrate cover  
About 31 Results

semiconductor wafer separator circular cover ("right-angle" OR "90 Degrees") stack (even OR flush OR coplanar)  
About 2,622 Results

semiconductor wafer separator circular cover ("right-angle" OR "90 Degrees") stack (even OR flush OR coplanar) carry protect gap

About 757 Results

"semiconductor wafer separator" circular cover ("right-angle" OR "90 Degrees") stack (even OR flush OR coplanar) carry protect gap  
1 Result

"semiconductor wafer separator"  
About 68 Results

Supplemental

<b>Electronic Database Searched</b>	Google patents
<b>Date Conducted</b>	12 December 2018 (12.12.2018)

"semiconductor wafer separator"  
About 68 results

"semiconductor wafer separator" ring  
About 32 results