

Patent Family	Title	Country	Patent Application or Publication Number	Patent Grant or Registration Number	Summary (Proposed)	Hyperlink
PIB1	Silanol-containing organic-inorganic hybrid coatings for high-resolution patterning	Finland	20185677	F1129480	Silanol containing hybrid coatings with controlled Si-H/Si-OH ratios and optional metal incorporation enable high resolution EUV patterning. The technology integrates into semiconductor workflows as resist films and underlayers, providing structural stability and developer compatibility for advanced microfabrication.	https://patenttiteltopalvelu.prh.fi/en/patent/20185677/
		PCT	PCT/FI2019/050584 or WO/2020/030855			https://patentscope.wipo.int/search/en/detail.js?docId=WO/2020030855&cid=P20-MN3W6K-77225-1
	用于高分辨率图案化的含硅烷醇有机-无机杂化涂层	China	CN201980066944.X or CN113015940A	CN113015940B		https://ps-system.cponline.cnipa.gov.cn/retrieveList?prevPageTit=changgui
	Silanol-containing organic-inorganic hybrid coatings for high-resolution patterning	Singapore	11202101348V	11202101348V		https://digitalhub.ipos.gov.sg/FAPF/eservice/IP4SG/PPT_OpenDossierRegistration?appNo=11202101348V
	Silanol-containing organic-inorganic hybrid coatings for high-resolution patterning	USA	US17/267521 or US202210311394			https://data.uspto.gov/patent-file-wrapper/search/details/17267521/application-data
	氟矽酸鹽樹脂塗佈組成物、產生組成物的方法、基板上圖案化的方法、形成抗蝕膜的方法以及產生半導體裝置的方法	Taiwan	TW108128318 or TW202018025	I845539		https://lponet.tipo.gov.tw/wpat1/hwpatc/hwpatengkm?@@0.6159674817921512
	실리콘 함유 코팅 조성물 및 그 용도	South Korea	10-2021-7007284	10-2861965-0000		https://doi.org/10.8080/1020217007284
高解像度パターンニングのためのシラノール含有有機-非有機ハイブリッドコーティング	Japan	P. 2021 / 531196 or P. 2021 / 534315A	7833764	https://www.j-platpat.inpit.go.jp/c/1801/PLJ/JP-7833764/15/en		
PIB2	Functional hydrogen silsesquioxane resins and the use thereof	Finland	20195142	F1128886	This invention provides hydrogen functional silsesquioxane polymers with tunable chemical properties, incorporating unsaturated groups for enhanced developer solubility. These materials enable high resolution EUV and electron beam lithography, delivering improved performance in semiconductor coating and resist applications.	https://patenttiteltopalvelu.prh.fi/en/patent/20195142/
	官能性聚氫倍半矽氧烷樹脂組成物、產生其的方法及其用途	China	CN202010114667 or CN111607089A	CN111607089B		https://ps-system.cponline.cnipa.gov.cn/retrieveList?prevPageTit=changgui
	Functional hydrogen silsesquioxane resins and the use thereof	USA	US17/433,630 or US20220162391	US12,554,198		https://data.uspto.gov/patent-file-wrapper/search/details/17433630/application-data
	官能性聚氫倍半矽氧烷樹脂組成物、產生其的方法及其用途	Taiwan	TW109106031 or TW202041599	I842839		https://lponet.tipo.gov.tw/wpat1/hwpatc/hwpatengkm?0074D75C0001010100000000002032000000001000000000*50
	기능성 하이드록젠 실세스퀴옥세인 수지 및 그의 이용	South Korea	10-2021-7030128	10-2866234-0000		https://doi.org/10.8080/1020217030128
高解像度パターンニングのためのシラノール含有有機-非有機ハイブリッドコーティング	Japan	2024-051402 or 2024-099520		https://www.j-platpat.inpit.go.jp/c/1801/PUJ/P-2024-099520/11/en		
PIB3	Silicon containing coating compositions and uses thereof	Finland	20235233	F1131213	This patent covers silicon containing resist underlayer coating compositions with tunable functional groups and high durability. The technology enhances developer compatibility, film stability, and optical property control, enabling advanced lithography and semiconductor or optical device fabrication across EUV, deep UV, and electron beam processes.	https://patenttiteltopalvelu.prh.fi/en/patent/20235233/
	Silicon containing coating compositions and uses thereof	PCT	PCT/FI2024/050070 or WO/2024/180279			https://patentscope.wipo.int/search/en/detail.js?docId=WO/2024180279&cid=P12-MN2I26-87750-1
	含硅涂层组合物及其用途	China	CN202480014708.4 or CN120917084A			https://ps-system.cponline.cnipa.gov.cn/documents/detail?prevPageTit=changgui
	Silicon containing coating compositions and uses thereof	Singapore	11202504092P			https://digitalhub.ipos.gov.sg/FAPF/eservice/IP4SG/PPT_OpenDossierRegistration?appNo=11202504092P
	Silicon containing coating compositions and uses thereof	USA	US19/158,071			https://data.uspto.gov/patent-file-wrapper/search/details/19158071/documents
	含矽塗層組成物、包含其的生產半導體裝置、光學裝置、光學元件以及光學主動裝置的方法、作為添加劑的應用、以及進行圖案化的方法	Taiwan	TW113106239 or TW202447348			https://lponet.tipo.gov.tw/wpat1/hwpatc/hwpatengkm?000F5F88000201010000000000B0320000000100000000*50
	실리콘 함유 코팅 조성물 및 그 용도	South Korea	10-2025-7032481			https://doi.org/10.8080/1020257032481
	シリコンを包含するコーティング組成物およびその用途	Japan	2025-546022 or 2026-508839A			https://www.j-platpat.inpit.go.jp/c/1801/PUJ/P-2026-508839/11/en
	Silicon containing coating compositions and uses thereof	India	IN202537077674 or 36/2025			https://prsearch.ipindia.gov.in/publicsearch
Silicon containing coating compositions and uses thereof	Europe	24709800.7 or EP4673493		https://register.epo.org/application?number=EP24709800&tab=main		

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PIB5	Low dielectric constant thin films, method of producing the same and uses thereof	Finland	20225923	F1131619	This patent describes low k siloxane based thin film materials and their preparation methods, achieving dielectric constants below 2.5 with high electrical reliability. The technology reduces signal delay and power consumption, making it highly relevant for advanced semiconductor interconnects and next generation device integration.	https://patenttitietopalvelu.prh.fi/en/patent/20225923/
	A method of producing semiconductor devices comprising low dielectric constant thin films	PCT	PCT/FI2023/050583 or WO/2024/079392			https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2024079392&_cid=P20-MN42X0-53746-1
	一种生产包含低介电常数薄膜的半导体器件的方法	China	CN202380066977.0 or CN119948595A			https://ps-system.cponline.cnipa.gov.cn/documents/detail?prevPageTit=changgui
	A method of producing semiconductor devices comprising low dielectric constant thin films	Singapore	11202500928U			https://digitalhub.ipos.gov.sg/FAPF/eservice/IP4SG/PT_OpenDossierRegistration?appNo=11202500928U
	A method of producing semiconductor devices comprising low dielectric constant thin films	USA	US19/119,832			https://data.uspto.gov/patent-file-wrapper/search/details/19119832/application-data
	半導體元件的製造方法、半導體元件以及整合器的用途	Taiwan	TW112138801 or TW202424075			https://tponet.tipo.gov.tw/twpat1/twpatc/twpatengkm?0020BCD4000201010000000000C03200000001000000000*50
	저유전상수 박막을 포함하는 반도체 장치의 제조 방법	South Korea	10-2025-7015498			https://doi.org/10.8080/1020257015498
	低誘電率薄膜を備えた半導体デバイスの製造方法	Japan	P.2025 / 517667 or P.2025 / 533767A			https://www.j-platpat.inpit.go.jp/c/1801/PU/JP-2025-533767/11/en
	A method of producing semiconductor devices comprising low dielectric constant thin films	India	IN202537044639 or 29/2025			https://iprsearch.ipindia.gov.in/PublicSearch/PublicationSearch/PatentDetails
	A method of producing semiconductor devices comprising low dielectric constant thin films	Europe	23793907.9 or EP4602644			https://register.epo.org/application?number=EP23793907
PIB6	High breakdown voltage dielectric polymer films, a method of producing the same and uses thereof	Finland	20235894		This patent describes siloxane based gap fill material systems and processes for forming advanced dielectric coatings with improved uniformity and reliability. The invention enables scalable deposition of high quality thin films that fill nanoscale features below 20 nm, supporting semiconductor and microfabrication applications with enhanced electrical performance.	https://patenttitietopalvelu.prh.fi/en/patent/20235894/
	High breakdown voltage dielectric polymer films, a method of producing the same and uses thereof	PCT	PCT/FI2024/050409 or WO/2025/032285			https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2025032285&_cid=P20-MN43ZS-84859-1
	High breakdown voltage dielectric polymer films, a method of producing the same and uses thereof	Singapore	11202600182P			https://digitalhub.ipos.gov.sg/FAPF/eservice/IP4SG/PT_OpenDossierRegistration?appNo=11202600182P
	High breakdown voltage dielectric polymer films, a method of producing the same and uses thereof	USA	US19/507977			https://data.uspto.gov/patent-file-wrapper/search/details/19507977/application-data
	間隙填充材料形成組成物、介電聚合物薄膜、半導體裝置、光學元件和光學主動裝置及形成其的方法	Taiwan	TW113129267 or TW202506837			https://tponet.tipo.gov.tw/twpat1/twpatc/twpatengkm?001E197E000201010000000000A03200000001000000000*50
		South Korea	10-2026-7003532			
	High breakdown voltage dielectric polymer films, a method of producing the same and uses thereof	India	IN202637003637 or 05/2026			https://iprsearch.ipindia.gov.in/PublicSearch/PublicationSearch/PatentDetails
High breakdown voltage dielectric polymer films, a method of producing the same and uses thereof	Europe	24755044.5				
PIB7		Finland	20246556		This patent describes low dielectric constant films based on polymerized organopolysiloxane materials and their fabrication methods. The cured films achieve dielectric constants below 2.85, high breakdown voltages, ultra low shrinkage, and strong mechanical robustness, enabling improved electrical insulation in semiconductor devices, optical elements, and optoelectronic systems.	https://patenttitietopalvelu.prh.fi/en/patent/20246556/
		PCT	PCT/FI2025/060211			
		China	202411973466.X			
	Low dielectric constant thin films, a method of producing the same and uses thereof	Singapore	11202600182P			
		Taiwan	TW114148220			

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PIB8	Solution processable metallo-organic complexes and uses thereof	Finland	20236200		This patent provides solution processable metallo organic complexes, particularly metal hydroxamate derivatives incorporating EUV absorbing elements such as tin, zinc, gallium, zirconium, or antimony. These materials enable uniform film formation through scalable coating techniques, delivering high refractive index, lithography dose reduction, and enhanced optical performance. The technology supports semiconductor lithography, optical elements, and functional coatings for next generation electronic and optoelectronic systems.	https://patenttitlietcpalvelu.prh.fi/en/patent/20236200/
	Solution processable metallo-organic complexes and uses thereof	PCT	PCT/FI2024/050571 or WO/2025/088249			https://patentscope.wipo.int/search/en/detail.js?docId=WO2025088249&_cid=P12-MN2RPT-13918-1
	有機金屬性化合物、其生產方法、包括其的聚合物、藉由將其液體或塗佈的塗層或膜、包括其的阻劑下層膜、用於生產半導體裝置、光學或半導體裝置及光學元件或光學主動裝置的方法、用於對半導體器件進行圖案化的方法以及有機金屬性化合物及聚合物的應用	Taiwan	TW113141013 or TW202528317			https://tiponet.tipo.gov.tw/wpat1/wpatc/wpatengkm?005672D6000201010000000000903200000001000000000*50
PIB9		Finland	20246562		This patent describes novel compounds and compositions for use in lithographic processes, particularly solution processable organopolymers. The technology enables precise patterning through spin on carbon hardmasks and functional underlayers, delivering uniform thin films with controlled molecular weight. It supports semiconductor device scaling, optical element fabrication, and optoelectronic system integration.	https://patenttitlietcpalvelu.prh.fi/en/patent/20246562/
		PCT	PCT/FI2025/060210			
		China	202411989374			
	Diols, methods for the preparation thereof, methods using thereof, and uses thereof	Singapore	10202404133S			https://digitalhub.ipos.gov.sg/FAMN/eservice/IP4SG/CM_UrlRewrite?p=dd13d9a9-4533-4b4d-9db2-3a319a4a72c
		Taiwan	TW114151990			
PIB10		Finland	20246260		This patent describes lithography methods based on novel metal organic resist materials that enable precise patterning using electron beam or light radiation. The technology improves process efficiency and patterning performance through tailored developer systems and resist underlayer integration, supporting advanced semiconductor fabrication and optical device manufacturing.	https://patenttitlietcpalvelu.prh.fi/en/patent/20246260/
	Lithography methods, and elements and devices obtainable by the methods	PCT	PCT/FI2024/050573 or WO/2025/093814			https://patentscope.wipo.int/search/en/detail.js?docId=WO2025093814&_cid=P12-MN2I26-87759-1
	微影方法以及能以該些方法所獲得的元件與裝置	China	CN202411989380.6			
		Taiwan	TW113141014 or TW202535839			https://tiponet.tipo.gov.tw/wpat1/wpatc/wpatengkm?002172BE000101010000000000803200000001000000000*50
PIB13		Finland	20253799		This patent describes novel polymers and compositions for use in lithographic processes, particularly spin on carbon hardmasks and resist underlayers. The technology enables high resolution patterning with uniform thin film formation and controlled molecular weight, improving process scalability and precision in semiconductor and optical device fabrication.	https://patenttitlietcpalvelu.prh.fi/en/patent/20253799/
	Polymers, methods for the preparation thereof, methods using thereof	Singapore	10202503518U			https://digitalhub.ipos.gov.sg/FAMN/eservice/IP4SG/CM_UrlRewrite?p=a1ad5695-0c7d-4f7d-8bca-50f5758cae99
		China	202511764700.2			
PIB14		Finland	20253182		This patent describes functional polymers with extended aromatic repeating units and engineered end groups for use in lithographic processes. The technology enables high resolution patterning through spin on carbon hardmasks and resist underlayers, delivering uniform thin films with structural stability and controlled molecular weight. It supports semiconductor scaling and optical device fabrication with improved process precision and scalability.	https://patenttitlietcpalvelu.prh.fi/en/patent/20253182/
	Polymers, methods for the preparation thereof, methods using thereof	Singapore	10202501209R			https://digitalhub.ipos.gov.sg/FAMN/eservice/IP4SG/CM_UrlRewrite?p=42239977-45b3-4a01-948d-29033c1b342
		China	202510597204.6			
PIB17		Finland	20253960		This patent describes methods for preparing organometallic salts and related precursor materials, particularly tin based complexes with carboxylate or thiocarboxylate ligands. The technology enables controlled synthesis of functional, solution processable materials with tunable stability and composition. These materials support advanced coating, lithography, and electronic applications, improving precision and scalability in semiconductor and optical device fabrication.	https://patenttitlietcpalvelu.prh.fi/en/patent/20253960/
	Methods for the preparation of organometallic salts and intermediate products thereof	Singapore	10202503895R			https://digitalhub.ipos.gov.sg/FAMN/eservice/IP4SG/CM_UrlRewrite?p=8c828c04-f38f-4254-b3d1-ae17bb6eaddc
		China	202512025335.X			
PIB18		Finland	20253961		This patent describes organometallic salts and compositions used as resist materials in lithographic processes, particularly tin based complexes with carboxylate or thiocarboxylate ligands. The technology enables the formation of patterned films through controlled heating, exposure, and development, delivering high resolution lithography with tunable stability and solvent based formulations. It supports semiconductor scaling and optical device fabrication with improved process precision and resist underlayer integration.	https://patenttitlietcpalvelu.prh.fi/en/patent/20253961/
	Organometallic salts, compositions thereof, lithography methods, and elements and devices obtainable by the methods	Singapore	10202503900U			https://digitalhub.ipos.gov.sg/FAMN/eservice/IP4SG/CM_UrlRewrite?p=89e9499d-f113-44fe-af04-fb62ad1d065e
		China	202512025397.0			