

## SECTION G — PHYSICS

**G03 PHOTOGRAPHY; CINEMATOGRAPHY; ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ELECTROGRAPHY; HOLOGRAPHY****G03F PHOTOMECHANICAL PRODUCTION OF TEXTURED OR PATTERNED SURFACES, e.g. FOR PRINTING, FOR PROCESSING OF SEMICONDUCTOR DEVICES; MATERIALS THEREFOR; ORIGINALS THEREFOR; APPARATUS SPECIALLY ADAPTED THEREFOR** (phototypographic composing devices B41B; photosensitive materials or processes for photographic purposes G03C; electrography, sensitive layers or processes G03G)**Note(s)**

In this subclass, the following terms or expressions are used with the meanings indicated:

- "photosensitive" means not only sensitive of electromagnetic radiation but also to corpuscular radiation;
- "photosensitive compositions" covers photosensitive substances, e.g. quinonediazides, and, if applicable, binders or additives;
- "photosensitive materials" covers the photosensitive compositions, e.g. photoresists, the bases carrying them and, if applicable, auxiliary layers.

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| <p><b>1/00</b> <i>Originals for photomechanical production of textured or patterned surfaces, e.g. masks, photo-masks or reticles; Mask blanks or pellicles therefor; Containers specially adapted therefor; Preparation thereof</i> [3, 2012.01]</p> <p><u><b>Note(s)</b> [2012.01]</u></p> <p><i>In this main group, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.</i></p> <p><b>1/20</b> • Masks or mask blanks for imaging by charged particle beam [CPB] radiation, e.g. by electron beam; Preparation thereof [2012.01]</p> <p><b>1/22</b> • Masks or mask blanks for imaging by radiation of 100 nm or shorter wavelength, e.g. X-ray masks, extreme ultra-violet [EUV] masks; Preparation thereof [2012.01]</p> <p><b>1/24</b> • • Reflection masks; Preparation thereof [2012.01]</p> <p><b>1/26</b> • Phase shift masks [PSM]; PSM blanks; Preparation thereof [2012.01]</p> <p><b>1/28</b> • • with three or more diverse phases on the same PSM; Preparation thereof [2012.01]</p> <p><b>1/29</b> • • Rim PSM or outrigger PSM; Preparation thereof [2012.01]</p> <p><b>1/30</b> • • Alternating PSM, e.g. Levenson-Shibuya PSM; Preparation thereof [2012.01]</p> <p><b>1/32</b> • • Attenuating PSM [att-PSM], e.g. halftone PSM or PSM having semi-transparent phase shift portion; Preparation thereof [2012.01]</p> <p><b>1/34</b> • • Phase-edge PSM, e.g. chromeless PSM; Preparation thereof [2012.01]</p> <p><b>1/36</b> • Masks having proximity correction features; Preparation thereof, e.g. optical proximity correction [OPC] design processes [2012.01]</p> <p><b>1/38</b> • Masks having auxiliary features, e.g. special coatings or marks for alignment or testing; Preparation thereof [2012.01]</p> <p><b>1/40</b> • • Electrostatic discharge [ESD] related features, e.g. antistatic coatings or a conductive metal layer around the periphery of the mask substrate [2012.01]</p> | <p><b>1/42</b> • • Alignment or registration features, e.g. alignment marks on the mask substrates [2012.01]</p> <p><b>1/44</b> • • Testing or measuring features, e.g. grid patterns, focus monitors, sawtooth scales or notched scales [2012.01]</p> <p><b>1/46</b> • • Antireflective coatings [2012.01]</p> <p><b>1/48</b> • • Protective coatings [2012.01]</p> <p><b>1/50</b> • Mask blanks not covered by groups G03F 1/20-G03F 1/26; Preparation thereof [2012.01]</p> <p><b>1/52</b> • Reflectors [2012.01]</p> <p><b>1/54</b> • Absorbers, e.g. opaque materials [2012.01]</p> <p><b>1/56</b> • • Organic absorbers, e.g. photo-resists [2012.01]</p> <p><b>1/58</b> • • having two or more different absorber layers, e.g. stacked multilayer absorbers [2012.01]</p> <p><b>1/60</b> • Substrates [2012.01]</p> <p><b>1/62</b> • Pellicles or pellicle assemblies, e.g. having membrane on support frame; Preparation thereof [2012.01]</p> <p><b>1/64</b> • • characterised by the frames, e.g. structure or material thereof [2012.01]</p> <p><b>1/66</b> • Containers specially adapted for masks, mask blanks or pellicles; Preparation thereof [2012.01]</p> <p><b>1/68</b> • Preparation processes not covered by groups G03F 1/20-G03F 1/50 [2012.01]</p> <p><b>1/70</b> • • Adapting basic layout or design of masks to lithographic process requirements, e.g. second iteration correction of mask patterns for imaging [2012.01]</p> <p><b>1/72</b> • • Repair or correction of mask defects [2012.01]</p> <p><b>1/74</b> • • • by charged particle beam [CPB], e.g. focused ion beam [2012.01]</p> <p><b>1/76</b> • • Patterning of masks by imaging [2012.01]</p> <p><b>1/78</b> • • • by charged particle beam [CPB], e.g. electron beam [2012.01]</p> <p><b>1/80</b> • • Etching [2012.01]</p> <p><b>1/82</b> • • Auxiliary processes, e.g. cleaning [2012.01]</p> <p><b>1/84</b> • • • Inspecting [2012.01]</p> <p><b>1/86</b> • • • • by charged particle beam [CPB] [2012.01]</p> <p><b>1/88</b> • prepared by photographic processes for producing originals simulating relief [2012.01]</p> |
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- 1/90 • prepared by montage processes [2012.01]
- 1/92 • prepared from printing surfaces [2012.01]
- 3/00 Colour separation; Correction of tonal value**  
(photographic copying apparatus in general G03B)
  - 3/02 • by retouching
  - 3/04 • by photographic means
  - 3/06 • • by masking
  - 3/08 • by photoelectric means
  - 3/10 • Checking the colour or tonal value of separation negatives or positives
- 5/00 Screening processes; Screens therefor**
  - 5/02 • by projecting methods (cameras G03B)
  - 5/04 • • changing the screen effect
  - 5/06 • • changing the diaphragm effect
  - 5/08 • • using line screens
  - 5/10 • • using cross-line screens
  - 5/12 • • using other screens, e.g. granulated screen
  - 5/14 • by contact methods
  - 5/16 • • using grey half-tone screens
  - 5/18 • • using colour half-tone screens
  - 5/20 • using screens for gravure printing
  - 5/22 • combining several screens; Elimination of moire
  - 5/24 • by multiple exposure, e.g. combined processes for line photo and screen
- 7/00 Photomechanical, e.g. photolithographic, production of textured or patterned surfaces, e.g. printed surfaces; Materials therefor, e.g. comprising photoresists; Apparatus specially adapted therefor**  
(using photoresist structures for special production processes, see the relevant places, e.g. B44C, H01L, e.g. H01L 21/00, H05K) [3, 5]
  - 7/004 • Photosensitive materials (G03F 7/12, G03F 7/14 take precedence) [5]
  - 7/008 • • Azides (G03F 7/075 takes precedence) [5]
  - 7/012 • • • Macromolecular azides; Macromolecular additives, e.g. binders [5]
  - 7/016 • • Diazonium salts or compounds (G03F 7/075 takes precedence) [5]
  - 7/021 • • • Macromolecular diazonium compounds; Macromolecular additives, e.g. binders [5]
  - 7/022 • • Quinonediazides (G03F 7/075 takes precedence) [5]
  - 7/023 • • • Macromolecular quinonediazides; Macromolecular additives, e.g. binders [5]
  - 7/025 • • Non-macromolecular photopolymerisable compounds having carbon-to-carbon triple bonds, e.g. acetylenic compounds (G03F 7/075 takes precedence) [5]
  - 7/027 • • Non-macromolecular photopolymerisable compounds having carbon-to-carbon double bonds, e.g. ethylenic compounds (G03F 7/075 takes precedence) [5]
  - 7/028 • • • with photosensitivity-increasing substances, e.g. photoinitiators [5]
  - 7/029 • • • • Inorganic compounds; Onium compounds; Organic compounds having hetero atoms other than oxygen, nitrogen or sulfur [5]
  - 7/031 • • • • Organic compounds not covered by group G03F 7/029 [5]
  - 7/032 • • • with binders [5]
  - 7/033 • • • • the binders being polymers obtained by reactions only involving carbon-to-carbon unsaturated bonds, e.g. vinyl polymers [5]
  - 7/035 • • • • the binders being polyurethanes [5]
  - 7/037 • • • • the binders being polyamides or polyimides [5]
  - 7/038 • • Macromolecular compounds which are rendered insoluble or differentially wettable (G03F 7/075 takes precedence; macromolecular azides G03F 7/012; macromolecular diazonium compounds G03F 7/021) [5]
  - 7/039 • • Macromolecular compounds which are photodegradable, e.g. positive electron resists (G03F 7/075 takes precedence; macromolecular quinonediazides G03F 7/023) [5]
  - 7/04 • • Chromates (G03F 7/075 takes precedence) [5]
  - 7/06 • • Silver salts (G03F 7/075 takes precedence) [5]
  - 7/07 • • • used for diffusion transfer [5]
  - 7/075 • • Silicon-containing compounds [5]
  - 7/085 • • Photosensitive compositions characterised by adhesion-promoting non-macromolecular additives (G03F 7/075 takes precedence) [5]
  - 7/09 • • characterised by structural details, e.g. supports, auxiliary layers (supports for printing plates in general B41N) [5]
  - 7/095 • • • having more than one photosensitive layer (G03F 7/075 takes precedence) [5]
  - 7/105 • • • having substances, e.g. indicators, for forming visible images [5]
  - 7/11 • • • having cover layers or intermediate layers, e.g. subbing layers [5]
  - 7/115 • • • having supports or layers with means for obtaining a screen effect or for obtaining better contact in vacuum printing [5]
  - 7/12 • Production of screen printing forms or similar printing forms, e.g. stencils
  - 7/14 • Production of collotype printing forms
  - 7/16 • Coating processes; Apparatus therefor (applying coatings to base materials in general B05; applying photosensitive compositions to the base for photographic purposes G03C 1/74)
  - 7/18 • • Coating curved surfaces
  - 7/20 • Exposure; Apparatus therefor (photographic printing apparatus for making copies G03B 27/00) [4]
  - 7/207 • • Means for focusing, e.g. automatically (combination of positioning and focusing G03F 9/02; systems for automatic generation of focusing signals in general G02B 7/28; means for automatic focusing of projection printing apparatus G03B 27/34) [4]
  - 7/213 • • Exposing with the same light pattern different positions of the same surface at the same time (G03F 7/207 takes precedence) [4]
  - 7/22 • • Exposing sequentially with the same light pattern different positions of the same surface (G03F 7/207 takes precedence) [4]
  - 7/23 • • • Automatic means therefor [4]
  - 7/24 • • Curved surfaces
  - 7/26 • Processing photosensitive materials; Apparatus therefor (G03F 7/12-G03F 7/24 take precedence) [3, 5]
  - 7/28 • • for obtaining powder images (G03F 3/10 takes precedence) [5]
  - 7/30 • • Imagewise removal using liquid means [5]
  - 7/32 • • • Liquid compositions therefor, e.g. developers [5]
  - 7/34 • • Imagewise removal by selective transfer, e.g. peeling away [5]
  - 7/36 • • Imagewise removal not covered by groups G03F 7/30-G03F 7/34, e.g. using gas streams, using plasma [5]

- 7/38 • • Treatment before imagewise removal, e.g. prebaking [5]
- 7/40 • • Treatment after imagewise removal, e.g. baking [5]
- 7/42 • • Stripping or agents therefor [5]

- 9/00 **Registration or positioning of originals, masks, frames, photographic sheets or textured or patterned surfaces, e.g. automatically** (G03F 7/22 takes precedence; preparation of photographic masks G03F 1/00; within photographic printing apparatus for making copies G03B 27/00) [4]
- 9/02 • combined with means for automatic focusing (automatic focusing in general G02B 7/09; systems for automatic generation of focusing signals G02B 7/28) [4]