

Artefactual Skills for Simulating Impasto Effect in Digital Painting: An Adobe Photoshop Solution

Godfred Yeboah Annum

Department of Painting and Sculpture, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
Email: anngodam@yahoo.co.uk

How to cite this paper: Annum, G. Y. (2022). Artefactual Skills for Simulating Impasto Effect in Digital Painting: An Adobe Photoshop Solution. *Art and Design Review*, 10, 475-494.

<https://doi.org/10.4236/adr.2022.104038>

Received: September 30, 2022

Accepted: November 7, 2022

Published: November 10, 2022

Copyright © 2022 by author(s) and Scientific Research Publishing Inc.
This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Impasto is one of the fascinating techniques in studio painting that traces its foundation to the period between the 17th and 19th century Italian painters like van Gogh. It is characterised by thick application of paint in a plastering mode to artistically model forms on a canvas using either a bristle brush or a palette knife. When effectively executed, the technique finishes with the effect of ridges that cast shadows under grooves created by the thick application to give the painting its unique tactile contrasting appearance. In digital painting, the painterly effect of impasto is simply impossible to execute. Most of the well-known graphic application software cannot offer any applicator that can render the characteristic effect excellently. The author of this paper has developed a practical scheme for achieving this result using the Craquelure Filter in Adobe Photoshop version 21. The principal objective of the author is to employ the descriptive and demonstrational research methods to illustrate this artefactual scheme, which constitutes a practice-led exercise under the design-based research scheme. In this scheme, the author engages two of the major digital painting techniques: “Digital photo-art” and “Traditional digital painting” techniques to execute a figure painting composition in impasto style.

Keywords

Impasto, Tactile, Craquelure Filter, Digital Photo-Art, Traditional Digital Painting

1. Introduction

One of the fascinating techniques in painting that require dexterity of skill to execute is the Impasto painting technique. The technique requires thick applica-

tion of paint, a mode that often reveals the character of the tip of the applicator. Painters sometimes mix the paint right on the canvas to derive the unique characteristic effect of impasto, an effect which leaves the painting with a textural finish that can be felt by touch and the visual impression of the dry paint peeling from the canvas. Oil paint is the traditional medium that has dominated this technique due to its thick consistency and slow drying rate. However, experimentation has shown that by increasing the body of gel in mixing acrylic paint, it renders it suitable for achieving impasto effect. The style that results from this mode of painting using oils or acrylic is more of impressionistic representation of forms than objective representation.

The internet today abounds with fascinating digital paintings ([Bing.com, 2022](#)) that prove the dexterity of new-media artists to use the computer as a tool for producing creative art works that march the aesthetic standard of works produce with traditional painting tools and techniques. Unfortunately, the uniqueness of the effect of impasto technique renders it technologically difficult to create with the computer. The closest this can be achieved is to camouflage a simulated visual effect that bears the resemblance of true impasto painting. Adobe Photoshop is equipped with a filter scheme that can help new-media artist to achieve this result after executing the digital painting in a particular procedure. This is the focus of this paper, which aims at demonstrating the author's practical procedures for achieving the effect of impasto in digital painting using Adobe Photoshop version 21.

Impasto Painting

Historical account reveals that the first objective for introducing this technique by masters such as Rembrandt, Titian, and Vermeer, was to represent folds in clothes or jewels ([Wales, 2022](#)). This was at its first emergence during the Venetian Renaissance where Titian and Tintoretto, created complex figurative scenes to explore how the sensuous properties of paint could convey light rippling off soft skin or cascading drapery. Titian's "Poesie" series including *Diana and Actaeon*, 1556-1559, demonstrated this mastery of his technique ([Auerbach, n.d.](#)).

The technique gained further prominence in the 17th century, when some Baroque painters such as Rembrandt, Frans Hals, and Diego Velázquez skilfully and minutely used the technique to depict lined and wrinkled skin or the sparkle of elaborately crafted armour, jewellery, and rich fabrics. The 19th-century painter Vincent van Gogh made notable use of impastos, building up and defining the forms in his paintings with thick, nervous dabs of paint. Twentieth-century painters such as Jackson Pollock and Willem de Kooning often applied impastos with dynamism and a gestural bravura that emphasized the physical qualities of the paint itself. Since then, raw pigments applied thickly to a canvas have become a staple technique of modern abstract and semi-figurative painting ([Chauhan, 2012](#)).

Abstract expressionists such as Hans Hofmann and Willem de Kooning also

made extensive use of it, motivated in part by a desire to create paintings, which dramatically record the action of painting itself. Frank Auerbach used such heavy impasto that, some of his paintings become nearly three-dimensional. The word impasto, originating from the Italian verb *impastare* “to knead”, “to paste” or “mix”, perfectly describes how these exponents applied paint in this technique (Wales, 2022).

The technique has inspired some contemporary painters of the 21st century, to explore it in various experimentations for stylistic results. In Ghana, mention can be made of Ablade Glover who has extensively used it to address his compositional themes in crowded confines of hustling and bustling activities. He uses warm hues to painterly portray vibrant scenes of Ghanaian life that focus on women and mothers from Africa, market scenes, crowds and landscapes (Guirandou, 2022). As documented by Chili Hawes, director of October Gallery, Glover uses warm impastoed pigments to express the sun and heat of his country to depict animated landscapes that mirror the exuberant diversity of Africa: its bustling market stalls, brightly attired crowds, and the dynamic energy associated with Ghana (Hawes, n.d.).

2. Methodology of the Study

This research is a practice-led digital painting exercise. In this modern digital technological dispensation, Practice-led (Candy, 2006) method of creative practice is a practical scheme under design-based research. In any practice-led research where systematic procedures for resolving artefactual task are essential like this paper is dealing with, the teaching method of demonstration for imparting knowledge cannot be ignored. It has therefore been appropriated in this study to systematically lead readers through digital procedures to elucidate the skills for simulating impasto effect in digital painting. The Descriptive Research Method was therefore used to explain the demonstrated procedures in a simplified sequence to bring clarity to the entire study.

Design-Based Research: Computerized or Digital art as it is popularly called is classified under the *Design-Based Research* (DBR) concept due to its technological underpinnings (Kennedy-Clark, 2013) and methodological design procedures (Anderson & Shattuck, 2012) in the use of virtual art tools for addressing artistic designing problems. DBR principles guide, inform and improve both practice and research in art educational contexts. It is relevant in situations where theory building and development of design principles become paramount in the application of computer technological tools for teaching and imparting digital painting skills to fine art students in higher education (Annum & Poku, 2021). This underpins the essence for its adoption in developing this skill for the benefit of digital painters.

Demonstration Method: Demonstration (Teachmint, 2022) is a method in teaching and learning processes carried out in a very systematic manner to help students who have difficulty in connecting theories to actual practice or are un-

able to understand the application of theories, gain better understanding of procedures. It is useful for the simplification of technical procedures developed by an artisan in any field of art under any practical pedagogical system. As a new-media art technologist exploring computer technologies for fine art painting, the above principles underlying Demonstration method, gives relevance to its usage to show the systematic step-by-step digital techniques for painting and simulation of the effect of impasto painting in Adobe Photoshop. Two of the major digital painting techniques: “Digital photo-art” and “Traditional digital painting” techniques (Annum, 2014) were employed to achieve this objective.

Descriptive Research Method: Descriptive Research method (Alhassan, 2007) is considered as one of the prevailing research methods of the behavioural sciences used to systematically investigate, examine, analyze and describe occurrences in the home, the classroom, recreational centres, offices and many other work places. It offers researchers the strategy for accounting for the status of a phenomenon under study by obtaining appropriate information that can best describe, interpret or explain the nature of a phenomenon. It is therefore the most appropriate research method for artists in studio-art practice who have to demonstrate to their readers, techniques and styles they employ in their practical activities to use to bring clarity to their discussions. This is the bases for adopting descriptive research method in this practice-led research to bring the technical procedures to the understanding of readers.

ESSENTIAL UTILITIES IN ADOBE PHOTOSHOP (Adobe Systems, 2013)

Adobe Photoshop, aside its dual functionality in creating and editing both bitmap and vector images, is embedded with filtration tools purposely for simulating variety of fascinating effects as it exists in easel painting to help digital artists, bring their digital paintings to the standard of traditional studio easel painting. It also enables designers to develop multiple stylistic ideas in digital painting (Annum, 2014).

Photoshop offers users the opportunity to work in any of the editing **Colour Modes** for changing colour values in images. It uses these modes to determine the colour model for describing and reproducing colours, and for displaying and printing images. The colour modes located in the image menu under the modes submenu (**Figure 1**), include RGB (red, green, blue); CMYK (cyan, magenta, yellow, black); and L*a*b* (the “L” component being luminance or lightness, the “a” ranging from green to red and the “b” component from blue to yellow, as two chromatic components). It also includes modes for specialized colour output such as Indexed Colour and Duotone, which is used to increase the tonal range of a grayscale image by using different colour inks to reproduce different gray levels. It is important to note that Colour modes affect the number of channels and the file size of an image.

Photoshop also offers **Colour Adjustments** tools for adjusting the tonal levels, which include colour brightness/contrast, colour balance, hue/saturation of continuous-tone images and posterize adjuster. This is a very important working

scheme in Photoshop for optimizing image quality and enhancing chromatic effects. The colour adjustment tools work essentially by mapping an existing range of pixel values and changing it to a new range of values. The Adjustments tools are located in the image menu under the adjustment submenu (**Figure 2**).

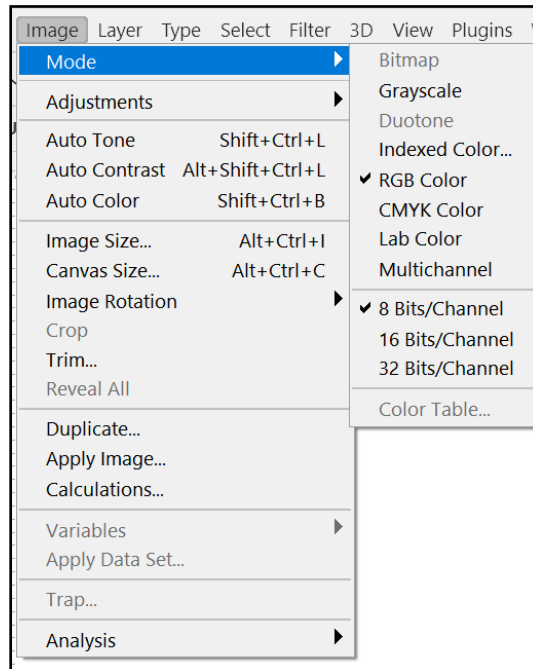


Figure 1. The colour mode submenu.

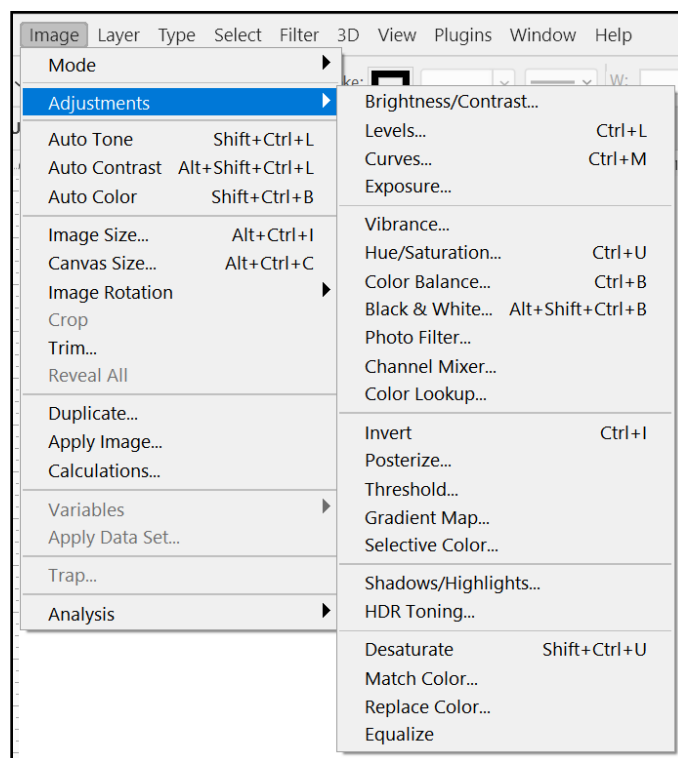


Figure 2. The adjustments commands submenu.

An important functionality in Photoshop that matters most in simulating effects is the **Filter Gallery** under the Filter Menu (**Figure 3**). The Filter Gallery provides a preview of many special effects that can be applied to an image to achieve fascinating results. It enables application of multiple filters to a single image in order to achieve unique effects. The filter Gallery displays thumbnails of available filter effects under a particular filter category. The category of “*Artistic*” helps in replicating painterly and artistic effects for a fine art painting project. The most significant of the filters as far as the author’s impasto simulation technique is concerned are the “*Watercolour*” effect under the Artistic filters (**Figure 4**) and “*Craquelure*” effect under the Texture filters (**Figure 5**).

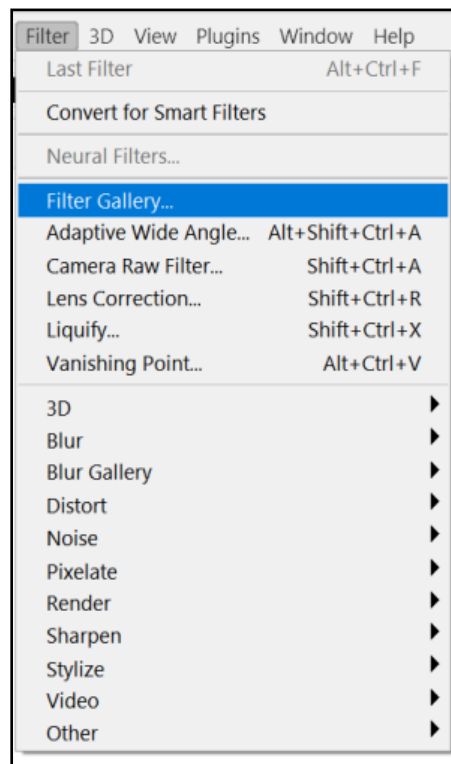


Figure 3. The filter gallery.

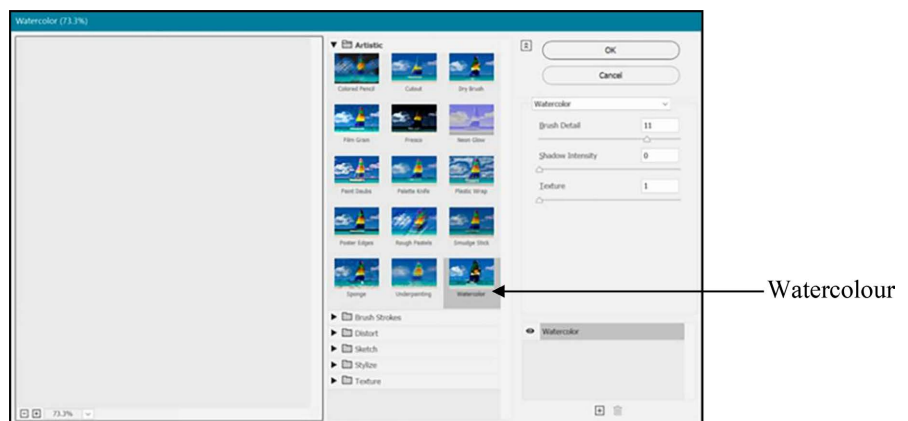


Figure 4. The Watercolour filter tool.

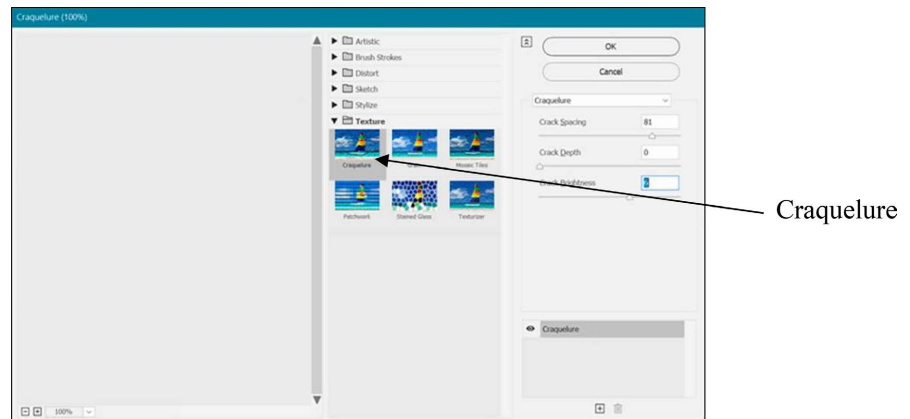


Figure 5. The craquelure filter dialogue box.

Watercolour Filter

The watercolour filter is designed to transform an image or a painting in a watercolour style using a virtual medium brush, loaded with water and colour simplifying details. Where significant tonal changes occur at the edges, the filter saturates the colour. In the authors impasto simulation technique, this filter first helps to intensify patches of strokes which when filtered with the Craquelure texture simulates the visual effect of impasto.

Craquelure Filter

The Craquelure Texture Filter is designed to give an image the appearance of high-relief plaster surface, which produces a fine network of cracks that follow the contours of the image. When applied, it creates an embossing effect for images that contain a broad range of colour values. It is these capabilities that the researcher appropriates for simulating impasto effect in his digital paintings.

Virtual Tools for Impasto Painting

It is important to understand the researcher's choice and mode of application of the essential tools and adjustment commands in Photoshop for image enhancement and digital colour manipulation to achieve impasto simulation. The tools and commands are:

- 1) Posterize command;
- 2) Colour balance command;
- 3) Lasso Selection Tools;
- 4) Smudge Tool.

Posterize Adjustment Dialogue Box (Figure 6)

The Posterize command opens its adjustment dialogue box that lets you specify the number of tonal levels or brightness values for each channel in an image and then maps pixels to the closest matching level. This adjustment is useful for creating special effects, such as large flat areas in a photograph. It is useful for introducing variant colour schemes in digital images. The effect is more vibrant and interesting especially when the number of levels in the image is reduced. The researcher uses this adjustment tool to change the colour scheme of the photograph to render it with a new colouristic effect for painting. This is the ad-

justment tool he uses to convert photographs into fascinating paintings.

The posterize adjuster is selected from; the *Image menu > Adjustments > Posterize* to open the *posterize dialogue box*. The adjustment is effected by moving the slider to increase or decrease the value in the level editable box, which correspondingly alters the tonal levels.

Lasso Selection Tools (Figure 7)

The lasso selection tools are three in all; Lasso, Polygonal lasso and Magnetic lasso.

The lasso and polygonal lasso tools let you draw freehand segments of the border of an image or to select a colour element or shape in an image. With the magnetic lasso tool, the border of an image snaps to the tool as you move the cursor along the border of an area in the image. The magnetic lasso tool is especially useful for quickly selecting objects with complex edges set against high-contrast backgrounds. Unfortunately, the Magnetic Lasso tool is not available for 32-bits-per-channel images.

Customising the Magnetic Lasso tool

Before using the lasso tool, it has to be customized in the options bar to specify the selection mode and its sensitivity to the edges of the image.

1) Specifying a selection mode in the options bar is based on whether to create a new selection “A”, add to an existing selection “B”, subtract from a selection “C”, or select an area intersected by other selections “D” (Figure 8).

2) The other options in Figure 9 determines the Feather and Anti-alias options, detection width, edge contrast, fastening points frequency and stylus pressure.

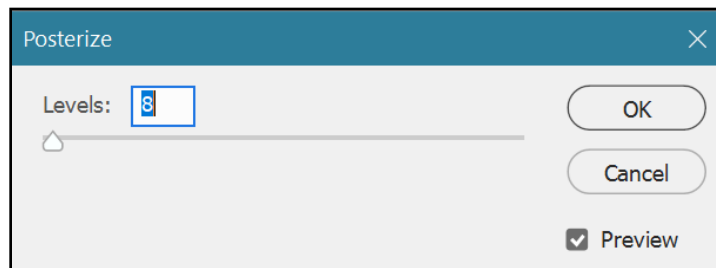


Figure 6. Posterize adjustment dialogue box.

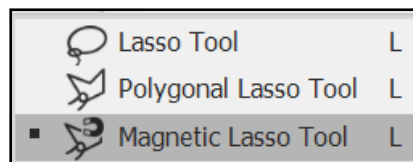


Figure 7. Lasso, polygonal lasso and magnetic lasso tool.

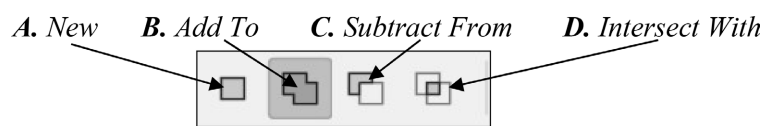


Figure 8. Selection Option

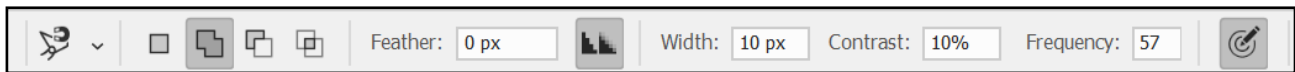



Figure 9. Magnetic lasso tool options bar.

- Feather blurs edges by building a transition boundary between the selection and its surrounding pixels. This blurring can cause some loss of detail at the edge of the selection.
- Anti-alias  smoothens the jagged edges of a selection by softening the colour transition between edge pixels and background pixels. Because only the edge pixels change, no detail is lost. Anti-aliasing is useful when cutting, copying, and pasting selections to create composite images.


***Note:** You must specify this option before using the tool. After a selection is made, you cannot add anti-aliasing.*

- Width specifies a detection space. When a pixel value is entered for the Width, the Magnetic Lasso tool detects edges only within the specified distance from the pointer.

To change the lasso pointer so that it indicates the lasso width, press the Caps Lock key. You can change the pointer while the tool is selected but not in use. Press the right bracket (]) to increase the Magnetic Lasso edge width by 1 pixel; press the left bracket ([) to decrease the width by 1 pixel.

- The contrast controls the lasso's sensitivity to edges in the image. Enter a value between 1% and 100% for Edge Contrast. A higher value detects only edges that contrast sharply with their surroundings; a lower value detects lower-contrast edges.
- The Frequency controls the lasso's sets fastening points. Enter a value between 0 and 100. A higher value anchors the selection border in place more quickly.

On an image with well-defined edges, try a higher width and higher edge contrast, and trace the border roughly. On an image with softer edges, try a lower width and lower edge contrast, and trace the border more precisely.

- Stylus Pressure If you are working with a stylus tablet, select or deselect the Stylus Pressure option . When the option is selected, an increase in stylus pressure decreases the edge width.

Colour Balance Adjustment dialogue box (Figure 10)

The Colour Balance command opens its Adjustment dialogue box in order to change the overall mixture of colours in an image. The Colour Balance dialogue is open from; the *Image menu > Adjustments > Colour Balance* to open the dialogue box.

To use the Colour Balance dialogue box:

- Make sure the corresponding layer in the layer panel or an image element is selected.
- Open the Colour Balance dialog box.
- Select Preserve Luminosity to prevent changing the luminosity values in the

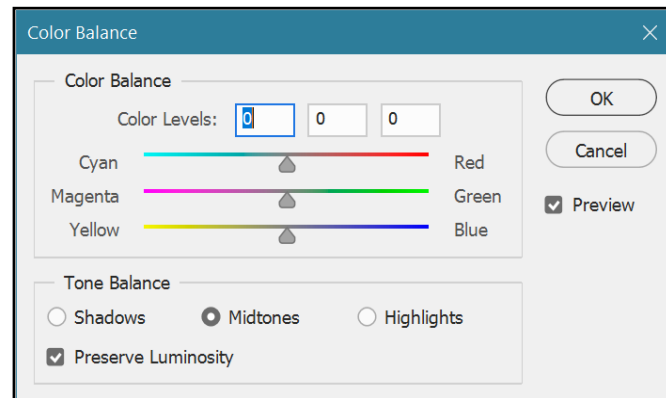


Figure 10. Colour balance adjustment dialog box.

image while changing the colour. This option maintains the tonal balance in the image.

- Select each of the tone balance options (*Shadows, Midtones, or Highlights*) separately to select the tonal range on which you want to focus the changes.
- For each selection, drag a slider toward a colour you want to increase in the image; drag a slider away from a colour you want to decrease in the image.

The values above the colour bars show the colour changes for the red, green, and blue channels. Values can range from -100 to $+100$.


The **Photo Filter** command can also be used to achieve similar result. The adjustment mimics the technique of placing a coloured filter in front of a camera lens to adjust the colour balance and colour temperature of the light transmitted through the lens in exposing the film. Photo Filter also lets you choose a colour preset to apply a hue adjustment to an image. If you want to apply a custom colour adjustment, the Photo Filter adjustment lets you specify a colour using the Adobe Colour Picker.

Smudge Tool



The smudge tool is the virtual applicator in Photoshop that the researcher uses to blend and spread colours on a surface to prepare an image for impasto simulation. The tool simulates the action of dragging a finger or a brush through wet paint. It picks up colour where the stroke begins and pushes it in the direction it is dragged. It is effective for retouching colours or blending tones of colours in an image. It is customised by using the *brush preset picker, mode, strength* and *finger painting* options.


The brush picker defines the character of the tip of the smudge tool. The harder the brush picker the more distinct the edges of the strokes appears and the better the result for simulating impasto effect. The normal smudging mode also creates the best result. The “strength” in this scheme specifies the volume of paint it drags per stroke of application. The higher the strength, the more distinct the stroke appears and vice versa. For best result, a moderately high strength between the values of 50% and 70% is recommended. The sample all layers option has to be excluded from the customisation schemes.

The finger painting option  is selected to enable the smudge tool to introduce new colour shades from the colour palette. Holding down the “Alt” key whilst the smudge is still selected will perform the function of applying the current colour displayed in the foreground colour box in the colour palette. When the Alt key is released, it reverts to the smudging mode.

As the main virtual applicator for blending colours, the smudge tool has to be customised to possess the appropriate character for creating desired strokes for achieving the desired impasto effect. The researcher’s technique is facilitated by the following schemes:


Step 1. Select the *Smudge Tool* from the tools bar.


Step 2. On the Smudge tool options bar.

1) Select Hard Round Pressure Opacity from the “Brush Preset Picker”  and adjust the size of the tool to a value between 20 pixels & 30 pixels for the paper size of 600 pixels longest dimension.

2) Select “Normal” in the Mode.

3) Specify a value between 50% and 70% in the Strength.

4) Uncheck “Samples cloned data from composite data”  “Finger Painting”  and Pressure for size icon .

5) Click *Toggle the brush settings panel* icon  to open the *Brush Preset Wizard* and customise the “brush tip shape” as follows:

- a) Check **ONLY** *Shape dynamics box*, all others **MUST** be unchecked.
 - b) Check Flip x & Flip y boxes.
 - c) Keep brush angle at 20°. This will create an oval shape for the smudge tool tip.
 - d) Set Roundness at 90%.
 - e) Set Hardness slider at 100%.
 - f) Set Brush application spacing value between 1%.
- 6) Select shape dynamics option and customise it as follows:
 - a) Size Jitter—10% and set Control as Pen Pressure.
 - b) Minimum Diameter—10%.
 - c) Angle Jitter—20% and set Control as Pen Pressure.
 - d) Roundness Jitter—20% and set Control as Pen Pressure.
 - e) Minimum Roundness—10%.
 - f) Check only “*Flip X*” and “*Flip Y*” excluding Brush Projection. This will force the tip of the smudge tool to tilt along those angles whilst smudging.
 - g) Click the padlock to the right-side of the shape dynamics to lock the settings.

3. Results and Discussion

The author’s impasto simulation technique is based on a digital photograph of a composition as his sketch model. The old tradition of easel painting enjoins fine

artists to sit in the scorching sun to sketch from nature, transfer unto a canvas before colour pigment is applied to produce a painting. With advancement in computer systems, smart phone and digital camera technologies, this laborious procedure has to give way to easier schemes like capturing sceneries of interest with digital camera devices and importing them into graphic application software as models for developing compositions. Using the digital camera to capture images for digital painting in Adobe Photoshop is fast and less laborious to execute. This is because the complexity in colour pigment orchestration and mixing on a palette plate, as well as the unbearable emission of toxic fumes from solvents is non-existent since the software offers millions of colour shades to work with.

The digital procedures discussed in this paper should not be regarded as a standardised blueprint, but fundamental artefactual scheme to help digital painters in advancing their own techniques for achieving similar results. The flexibility of Adobe Photoshop application tools makes this a possibility.

Painting Procedures

Step 1: Setting new pixel dimension for the sketch image

Once the photograph to be worked on is opened in Photoshop, it must first be resized into smaller pixel dimensions. This is very vital for maintaining a freeze-free working system. The width or height dimension of the image has to be set at a pixel dimension of not more than 600 pixels. **Figure 11(a)** is the original photograph serving as the sketch from which the sample image (**Figure 11(b)**) for this demonstration was cropped and resized.

To edit the image size, go to *image menu > image size* to open the image size dialogue box. It is important to ensure that the resample image box is checked as well as the constrain proportions box. The resolution has to be 72 pixels per inch, with any of the image dimensions not more than 600 pixels. This is to help prevent the computer from freezing when colour application begins. The cropped composition (**Figure 11(b)**) was slightly edited with the smudge tool as a matter of choice, to modify the form. This had to do with the neck of the mother in the composition. It was purposely to enhance the pose of the woman (**Figure 11(c)**).

Step 2: Selecting picture elements with the magnetic lasso tool:

- 1) Select the magnetic lasso tool (**Figure 7**).
- 2) Carefully click the border of the image (**Figure 11(c)**) described in the layer panel as the background image to set the first fastening point and release the mouse button. Move the mouse along the border so that the points automatically snap to the colour pixels. Fastening points anchor the selection border in place.
- 3) To draw a freehand segment, depressed the mouse button and drag the cursor along the edge you want to trace.
- 4) The most recent segment of the selection border remains active. As you move the pointer, the active segment snaps to the strongest edge in the image, based on the detection Width set in the options bar. Periodically, the magnetic lasso tool adds fastening points to the selection border to anchor previous segments.

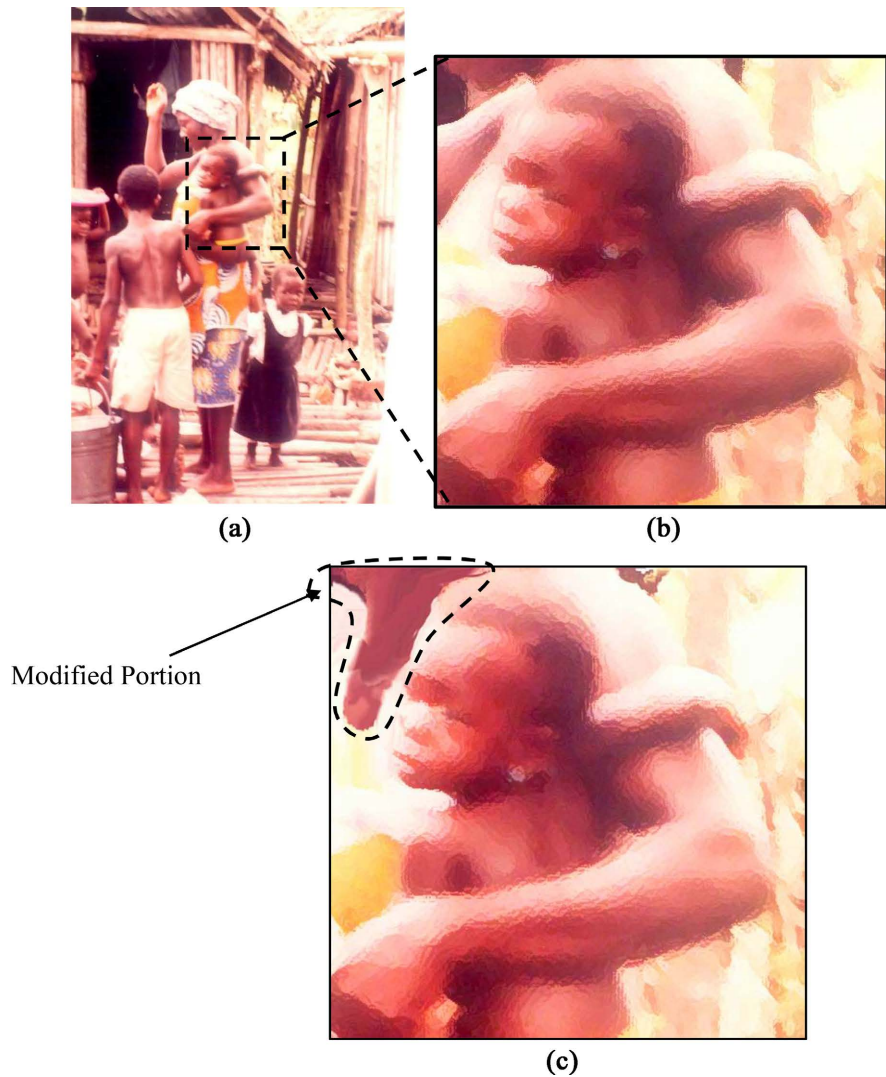


Figure 11. (a) Original photograph; (b) Cropped sample image; (c) Modified composition.

5) If the border does not snap to the desired edge, click once to add a fastening point manually. Continue to trace the edge and add fastening points as needed.

6) To switch temporarily to the other lasso tools, do one of the following:

- To activate the lasso tool, hold down Alt and drag with the mouse button depressed.
- To activate the polygonal lasso tool, hold down Alt, and click.

7) To erase recently drawn segments and fastening points, press the Delete key on the keyboard until you have erased the fastening points for the desired segment.

8) To close the selection border:

- Double-click, or press Enter or Return to close the border with a freehand magnetic segment.
- Hold down Alt and double-click to close the border with a straight segment.
- Drag back over the starting point and click to close the border.

Step 3: Optimising with Colour Balance and Posterize Commands.

The colour scheme of the selected picture elements (**Figure 12**) has to be optimised (**Figure 13(a)**), with the Colour Balance command (**Figure 10**) as a matter of choice before the posterize command (**Figure 6**) is used to break the continuous photographic tones into levels of large flat areas (**Figure 13(b)**). This is achieved based on the number of levels specified in the posterize dialogue box. For this exercise, eight (8) levels was specified.

Step 4: Using Smudge Tool to Apply and Blend Colours (Figure 14(a))

Whilst the body areas were still selected, the *Select Menu* > *Inverse*, (Shift + Ctrl + I) had to be activated to select the cloth and background areas. In Photoshop, the colour palette provides millions of colour shades to be chosen for application using the smudge tool. Technically, the smudge tool can be used to apply colours and blend colours as well. The colour balance adjustment dialogue box can also be used to optimise the coloristic effect of the image as the smudging progresses.


- 1) In this process, the finger painting option  of the smudge tool was



Figure 12. Selecting with magnetic lasso tool.

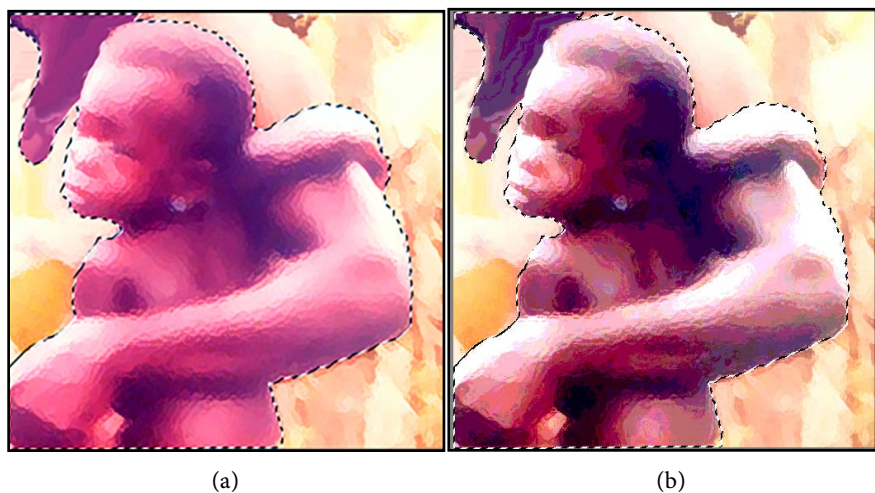



Figure 13. (a) Optimize with colour balance; (b) Posterized skin element.

activated to enable application of colour shades and tints from the colour palette. As the colours were applied, the strokes were loosely blended simultaneously in a swiping motion, maintaining the roughness of the strokes (*It is important to use broad hard edge strokes and ensure that the strokes directions are visible when zoomed in and out. This is paramount for achieving desired result. Any hard round brush tip of size between 20 & 30 pixels is appropriate for producing distinct strokes on a canvas size of not more than 600 pixels on any dimension. Note that, the more noticeable the strokes appear, the better the impasto simulating effect will be*).

2) Zooming In and Out of the image by holding down the **ALT key** on the keyboard whilst scrolling the mouse, makes it possible to smudge minute details.

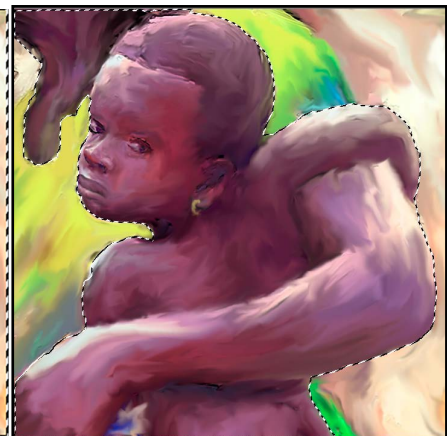
3) The inverse command was activated again (*Shift + Ctrl + I*) to select the body areas before blending the posterized flat tones. At this stage, new colour shades and tints were introduced as a matter of creativity to enhance the colouristic effect of the image and to help in modelling the figure (**Figure 14(b)** & **Figure 14(c)**). The finger painting option  of the smudge tool was activated for this purpose.



(a)



(b)



(c)

Figure 14. (a) Painting background & dress elements; ((b), (c)) Painting and modelling of skin colour elements.

The smudging was done using swiping motion strokes, executed in varied directions.

It is important to note that any deliberate attempt to blend the strokes with any soft round tip smudge tool to achieve smooth finish will adversely affect the impasto rendering. To tackle minute details, the size of the smudge tool has to be reduced below 20 pixels depending on the size of the minute area. Zooming In and Out by holding down the **ALT** Key on the keyboard whilst scrolling the mouse is essential for smudging minute areas.

Step 5: Impasto Simulation

Two filtering procedures were used in this scheme: Watercolour Filter under Artistic and Craquelure Filter under Texture. The selection of the skin elements was first removed so both the skin and the background will be treated at the same time.

Watercolour Filter (Figure 15)

Technically, the watercolour filter simplifies details by repainting an image in a watercolour style using a medium brush loaded with water and colour in a virtual state. Where significant tonal changes occur at the edges, the filter saturates the colour. The technique causes paint to build up along the edges of the brush stroke that displays broad range of colour values. It also enhances the distinctiveness of the individual smudged strokes, which is paramount in achieving impasto effect. This effect is the motivation for employing the watercolour filter as the preliminary process for preparing an image to be rendered with the Craquelure Filter to achieve impasto finish.

In the filter dialogue box, the shadow intensity and the texture sliders were reduced to the lowest default values of 0 & 1 respectively. It is only the brush detail slider that was adjusted to control the amount of paint that builds up along the edges of the brush stroke.

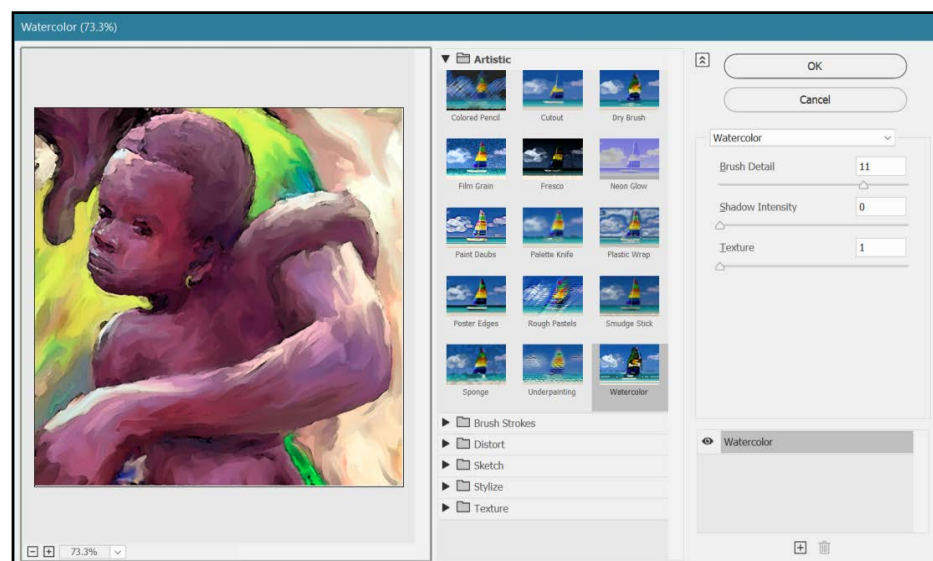


Figure 15. Rendering with watercolour filter.

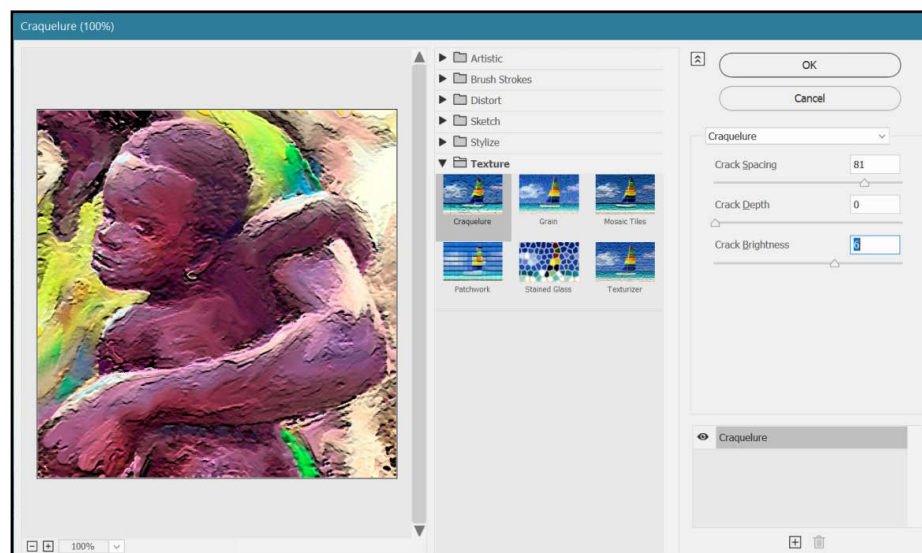


Figure 16. Rendering with craquelure filter.

Craquelure Filter (Figure 16)

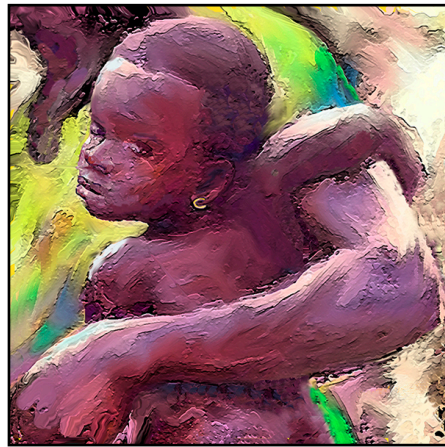
This is the final action that is performed to simulate impasto effect in Adobe Photoshop after the image has been treated with the watercolour filter. Technically, the Craquelure filter repaints an image onto a high-relief plaster surface, producing a fine network of cracks that follow the contours of the image. The filter creates embossing effect especially with images that contain broad range of colour values. This is the fascinating effect that informs the researcher's choice for employing the Craquelure as a follow up procedure to the watercolour filter to simulate his impasto effect.

In the filter dialogue box, the crack depth slider was reduced to the lowest default value of 0, whilst the crack spacing and crack brightness sliders were adjusted to enhance the impasto effect.

4. Finished Result

Figure 17(a) is the resultant effect of the author's simulation technique. The same procedure produced **Figure 17(b)**. **Figure 17(c)** on the other hand is not a digital painting but an impasto painting, resulting from Prof Ablade Glover's traditional impasto painting technique. Glover is a renowned Ghanaian impasto painter who employs "wet-on-wet" and thick application of paint pigment on canvas to produce his impasto paintings characterized by lusciousness and dramatized result (Moller, 2022). By the author's personal acquaintance with Glover, it can be confirmed that his favourite painting applicator, the palette knife, enables him to achieve his swirling impasto effect, which is similar to the author's swiping technique of colour smudging.

The visual effect of the author's digital paintings (**Figure 17(a)** & **Figure 17(b)**) in comparison with Glover's **Figure 17(c)**, undoubtedly registers similarity in visual tactility and roughness.



(a)



(b)



(c)

Figure 17. (a) Simulated Impasto Effect; (b) Simulated Impasto Effect; (c) Oil on canvas 122 × 122 cm by Prof Ablade Glover. Source <https://www.louisimoneguirandou.gallery/en/artists/35-ablade-glover/works/16-ablade-glover-mobile-menace-2018/>.

5. Conclusion

The fascinating characteristic of impasto as a style in studio painting makes it challenging to tackle in digital painting. The closest effect a new-media artist can realise is to simulate the effect as shown in **Figure 17(a)** & **Figure 17(b)**. This paper has demonstrated that it will take skilful research to devise a scheme in any graphic application software to render this result. Adobe Photoshop, which

has been the software for this research comes with intricate tools for drawing and painting. It is however not equipped with any brush or palette knife for painting to achieve this style.

The digital procedures discussed in this paper are the result of the author's seventeen (17) years experience in digital painting, exploring artefactual skills in developing schemes to render his digital paintings with the same visual qualities as easel paintings possess. His scheme for simulating impasto effect should therefore not be regarded as a standardised blueprint, but a fundamental artefactual scheme to help digital painters in advancing their own techniques. The flexibility of Adobe Photoshop drawing and painting tools makes it possible to explore other schemes to achieve similar effects.

The procedures demonstrated are only to serve as a basic manual for using:

- 1) The lasso tool for selecting picture elements.
- 2) The colour balance adjustment dialogue box for adjusting tonal levels in an image.
- 3) The posterize adjustment dialogue box for creating large flat tones for building colour schemes.
- 4) The smudge tool for applying and blending colours.
- 5) The filter gallery for the simulation of impasto effect in a digital painting.

The motivation for conducting this research has been to create basic technological procedures in Adobe Photoshop for enriching both amateur and professional fine artists with the needed skills for achieving impasto finish in digital painting.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Adobe Systems (2013). *Adobe Photoshop Help and Tutorials*.
https://help.adobe.com/archive/en/photoshop/cs6/photoshop_reference.pdf
- Alhassan, S. (2007). *Modern Approaches to Research in Educational Administration*. Revised Edition. Payless Publication Limited.
- Anderson, T., & Shattuck, J. (2012). Design-Based Research: A Decade of Progress in Education Research? *Educational Researcher*, 41, 16-25.
<https://doi.org/10.3102/0013189X11428813>
- Annum, G. Y. (2014). Digital Painting Evolution: A Multimedia Technological Platform for Expressivity in Fine Art Painting. *Journal of Fine & Studio Art*, 4, 1-8.
http://www.academicjournals.org/article/article1419418868_Annum.pdf
- Annum, G. Y., & Poku, K. A. (2021). Image Colouration in Adobe Photoshop: A Digital Painting Technique for Transforming Grayscale Photographs into Colour Mode. *Art and Design Review*, 9, 381-398. <https://doi.org/10.4236/adr.2021.94033>
- Auerbach, F. (n.d.). Impasto. *National Galleries Scotland*.
<https://www.nationalgalleries.org/art-and-artists/glossary-terms/impasto>

- Bing.com (2022). *Digital Painting*.
<https://www.bing.com/images/search?q=Digital+Painting+in+Photoshop&form=RESTAB&ajf=70&first=1&tsc=ImageHoverTitle>
- Candy, L. (2006). *Practice Based Research: A Guide*.
https://www.researchgate.net/publication/257944497_Practice_Based_Research_A_Guide
- Chauhan, Y. (2012). Impasto Art. *Encyclopaedia Britannica*.
<https://www.britannica.com/art/impasto>
- Guirandou, L. (2022). *Ablade Glover*.
<https://www.louisimoneguirandou.gallery/en/artists/35-ablade-glover/biography/>
- Hawes, C. (n.d.) Ablade Glover. *October Gallery*.
<https://octobergallery.co.uk/artists/glover>
- Kennedy-Clark, S. (2013). Research by Design: Design-Based Research and the Higher Degree Research Student. *Journal of Learning Design*, 6, 26-32.
<https://doi.org/10.5204/jld.v6i2.128>
- Moller, C. (2022). *Ablade Glover*.
<https://www.christophermollerart.co.za/artists/ablade-glover>
- Teachmint (2022). *Demonstration Method—An Introduction*.
<https://blog.teachmint.com/demonstration-method-an-introduction/>
- Wales, J. D. (2022). *Impasto*. <https://en.wikipedia.org/wiki/Impasto>