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INTERVIEW WITH
DR. HEBA ADEL

INTERIOR DESIGN
CINEMA & THEATRE
GRAPHIC DESIGN
FASHION

Modern Trends MAGAZINE

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INTERVIEW
With Dr. Heba Adel

YOUR GUIDE FOR SUCESS
in academic research

Interview answered by Dr. Heba Adel

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- Ph.D. in operations and supply chain management from Cairo University.
- Lecturer of SCM in The American University in Cairo, School of Business Executive Education.
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Interview conducted by: Dr. Samah Nassar

Have you wondered about how your work should get published? Have you had doubts about the conductance and publication of academic research? This effective guide provided by Dr. Heba Adel outlines the steps for successful academic publication and research progress. It will help both students and staff tackle common problems and pitfalls that often hinder the publication of papers or academic promotion.

What are the terms for seeking highest standards of research that can affect university ranking?
-Most of international standards that rank universities worldwide depend on the research of its teaching staff as a crucial dimension for assessing the university's rank and mainly those research work that is published at Scopus and Web of Science ranked journals.

What are the common steps that might help establish your research?
-Each field has its own methodological steps but what is important is to ensure from your target journal's guidelines their requirements and the type of research they are seeking (e.g. research articles, case studies, qualitative or quantitative research, conceptual or empirical papers)

What are the steps that follows writing your research article after you draft has been created?
-Researchers should review their journal's scope and manuscript author guidelines to send your research work to the right journal and save being desk rejected.

What are the reasonable measures to ensure that the researcher is aware of and complies with the regulatory framework relevant to the research being undertaken?
-The new rules of academic promotion for the teaching staff at higher education is published at the website of Supreme council of universities it should be read properly before submission for promotion or even earlier before proceeding in your publications.

-If you are targeting national rather than international journals kindly make sure that your local journal matches the requirements of the Supreme council of universities or you're going to lose marks. Also, these conditions and points of assessment are published at their websites.

What are the new SCU rules for academic promotion?
-The new rules for academic promotion of teaching staff in higher education institution indicate that a research is not called international unless it is published at Scopus or web of science journal.

What are the common types of submitting manuscripts and the structure of the research paper?
-You have two options to publish your research paper, either at an academic journal with ISSN or conference proceedings with ISBN.

How to cultivate a culture of rigor while developing the researchers?
-We should encourage our teaching staff at our universities our to publish internationally at top-ranked journals and international conferences to support their academic promotion, enhance our university's ranking and thus our country's ranking in scientific research.

What are the research sources and their usages?
-Our teaching staff can depend on references that can be accessed from the Egyptian knowledge bank EKB as the databases included in it are trusted sources for rigorous literature review and not depend on predatory journals.

What is the benefit of publishing your academic research internationally?
-For career progression and personal development.
-For self-esteem and to receive internal & external recognition.
-To share knowledge and experience.

How to find the ranking for your journal?
https://www.scimagojr.com/journalrank.php
https://jcr.clarivate.com

Finally, what makes a good paper?
Editors and reviewers look for:
-Originality – what's new about subject, treatment or results?
-Relevance to and extension of existing knowledge
-Research methodology – are conclusions valid and objective?
-Clarity, structure and quality of writing – does it communicate well?
-Sound, logical progression of argument.
-Theoretical and practical implications (the 'so what'? factors)
-Adherence to the editorial scopes and objectives of the journal.
-A good title, keywords and well written abstract.

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How to set the references correctly?
-Supreme Council of Universities (2019). New Egyptian SCU Rules for Academic Promotion of Professors & Associate Professors.
http://www.scu.eg/News/168

Link for: Okda, Mahynour. (2019). A Guide to Getting Published.
Emerald Publishing.
https://drive.google.com/file/d/1R4-4jtpslmWY4HenAQrNjwFx2je8d2-7/view?usp=sharing

Link for 13-
-قواعد ونظام عمل اللجان العلمية بالدورة
https://drive.google.com/file/d/14ffFR_bwkHsNqFwKbhzrIe8-lom21gxD/view?usp=sharing

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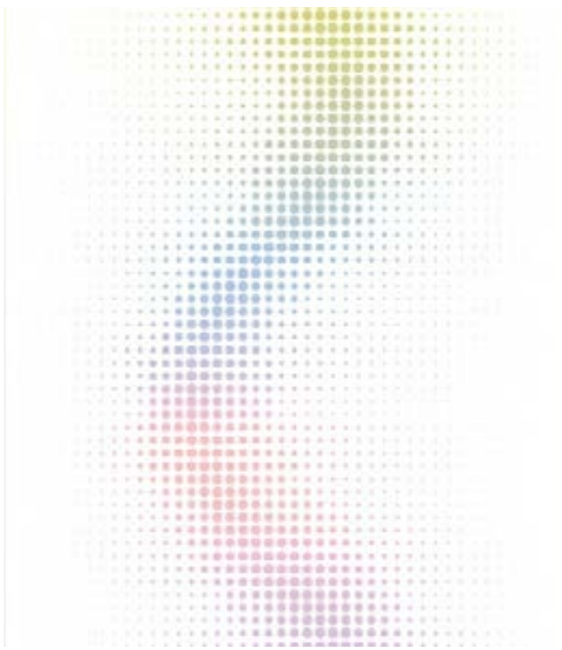
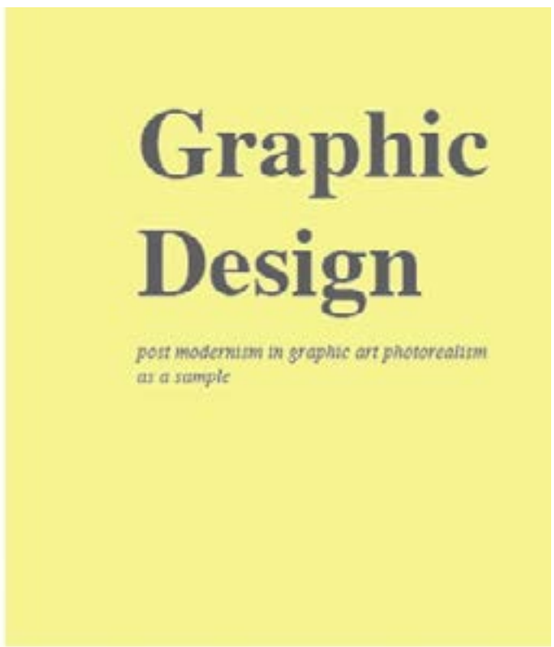
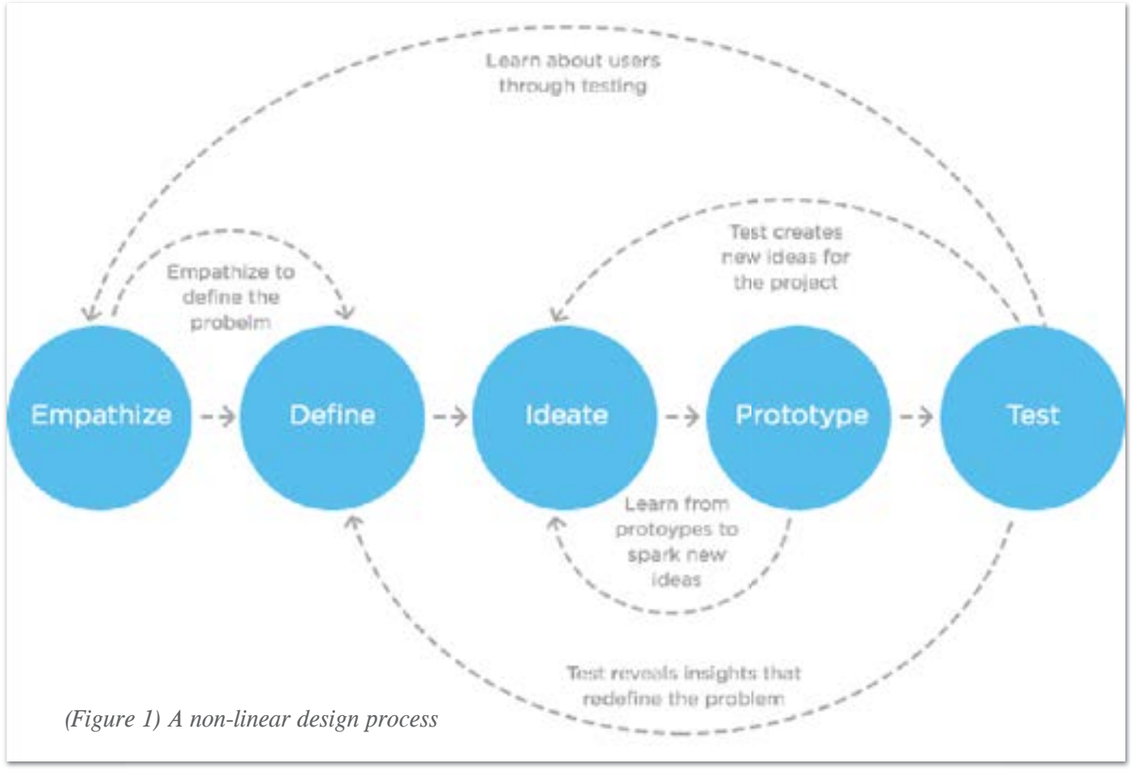



Graphic
Design
post modernism in graphic art photorealism
as a sample

DESIGNERLY WAYS OF KNOWING

By: Dr. Hany M. El-Said

An interesting title I found for NIGEL CROSS, discussing the theoretical bases for treating design as a coherent discipline of study. His book is quite clear and will let you able to organize your mind recognizing the opportunities that you are missing in your work. And here I will try to discuss some of the main target of this book not the book itself in a simple way, but different way, my own way of knowing and thinking.
The underlined sentence is just an example to what you already do in your design career. That what makes you a real designer, is your personality and attitudes. Where your vision and capabilities to create new designs, solutions for a design problem will vary according for number of variables. Starting from the simplest affecting one - your mood - to the most controlling variable, which is time. Pathing by the limitations made by the stack holders you are dealing with (CEO, Managers, Clients or End Users...etc.), the available facilities that you can use to proceed with your ideas. Never the less your own skills that you have to evaluate and develop all the time till the end of your career.



(Figure 1) A non-linear design process

In another words, to make yourself a good designer you have to manage your skills according to design limitations and the available facilities regarding time constrains.

It is true that you as designer have to feel empathy and follow a series of process called design process to develop an understanding in which the people we design services and products for are the centerpiece and to fulfill your project, but your attitudes that may be effected sometimes by your momentum mood will definitely direct your way of thinking toward a certain point of view, or a source of inspiration to deal with it. In the beginning of your study in design school you may feel uncomfortable with the design process, but with more experience you will get, you will find yourself unconsciously developing your own model of it. Although it seems to be so fixed, but the way you follow to proceed with it, using your skills better way will make it different and fitted to your way of knowing and thinking.

The design process as mentioned before has many variances, having 3 to 7 stages, phases or modes, all variances alike represents the same principles. 5 staged model (figure 1) that is suggested by Hasso-Plattner Design Institute which is also known as d.school, is at the forefront of application and teaching of design thinking.

Empathizing, and defining the design problem is the most crucial process that you have to be so wise handling the information you collect within your research. That finding, selecting and connecting related sources of information, classifying the information will affect your end result for sure. Mind mapping will be so helpful tool to investigate the possibilities and the links among the different approaches you may find. And once again, your attitude will format the way and direction you look for information, and that is what make the differences among designers working on similar cases.

This attitude or as some people called it characteristic personality has been created through a long way called experience. All what you have been through, using any of your senses has been developed into a kind of mental tool, control and affect the way you recognize and think. And designer has to work on developing his own experience all the time, what make better chance to create new designs following up to the state of art.

Designer`s experience need to be updated all the time, even by just seeing. Every design, idea or even regular thing you see it in your surroundings, transformed directly unconsciously into visual knowledge that you cannot even recognize that you gained. It is the way our eyes and brain works, where the eye capture the complete seen, while you are focusing with your conscious mind on certain type of information, and the mind store all the elements of this seen in your back head. -Such information will be enriched for sure if your learned how to see designerly way- but anyhow the, the more information you collect the more creative idea you will be able to design.

Going back to the way our brains works, on the level of functional design, the myth of inspiration will disappear. Because it is a matter of involvement in the problem of design, that the way you abstract the problem into simple formula will automatically recall all the related pieces of information you have in your back head to forehead. Where what we call inspiration happens, but it`s actually imagination based on the previous knowledge and experiences. That the forehead recall every related information according to the definition you made for the problem you are working on, then it tries reordering it into new ways. Testing all the possibilities unconsciously till it spark making you say I found it.

And here we have to understand the meaning of word “design”, according to oxford dictionary it means {A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made} or {The arrangement of the features of an artefact, as produced from following a plan or drawing}.

Also it means {A result of a plan; intentionally}. But the business dictionary make it more clear as {Realization of a concept or idea into a configuration, drawing, model, mould, pattern, plan or specification (on which the actual or commercial production of an item is based) and which helps achieve the item›s designated objective(s).

All the previous definitions in comparison to the way we use to manipulate a sketch or idea through sketching and trying all the alternatives of it, this process known as design morphology. Leads us as designers to translate the word design into DE-SIGN, what means decoding the relation among the elements through analysis and put it in the basic form of it. The way makes us able to visualize new order for it and test more possibilities. So, once again, the more experience you have the more elements you will able to handle and re-order it into new design.

But such mental visualization is not what we aiming for. Because not everything we imagine we can translate into drawings according to your own drawing skills. And sometimes you may imagine an idea, but after drawing it you find it silly. Here we have to translate the idea into a sketch without real judgment.

It is the ideation process, where you have to let you mind free to go in any direction, drawing anything come on your mind on a big white paper. That your brain through your eyes will compare what put on paper to what you have in mind. To find yourself drawing new sketch in a try to come closer to your imagination. Keep doing this with every idea you can imagine, and according to your skills, experience and related knowledge you will find a variety of ideas on your paper.

In some design majors, your quality as designer will be tested by how many sketches you made by hour.

For new design students, it may be problem to investigate and select the appropriate discipline to extract the information to use. Or later on, to avoid having design fixation (Figure 2), where an reviewed concept or design dominate his mind and starting reproduce the same old design with slight changes.
Such problem will vanish by training on analytical thinking, through your academic study. But only if you felt enough commitment toward your project, and passion to create your own concept representing your personality.

Figure 2 – the loop of design fixation

Because design - according Melissa Brunet, professional Designer - is a process, much like editing, where you start with a general concept, then hone it as close to perfection as you can within a given deadline, achieving perfect balance is what makes me passionate about it. Balance in design is achieved when a designer has solved the problems put forth in a client brief using an easy to understand, uncluttered visual solution. The amount of culture, knowledge of design history and skills a designer possesses all contribute to his/her capacity to provide original, high-quality solutions. It is this quest for culture, knowledge and skills — capable of filling a lifetime — that make a designer›s passion grow and keep the fire of creativity alive. Where every new project is more thrilling than the last :).

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Interior
Design
designing for happiness and meaningful work experience

Inclusivity in interior design

…fact or illusion?

By: Dr. Sarah Nabih

Inclusive design … A well-known term in the world of design in general, but to what extent is it really rightfully understood? And to what extent is it really applied in the world of interior design specifically? And is it applied the right way?

This noble goal took many different terms all over the years (be it universal design, accessible design …etc.), which though the slight differences between them, still all of them serve the same main target "creating a society that provide equal opportunities to all society members regardless of their gender, race , type of disability, culture background ..etc.", in this case through design, though inclusive design is the most complicated to achieve through all the previously mentioned.

Unfortunately by analyzing what has really been applied in the real world, we can only notice that most of the available designs are related to mobility impairment with the highest percentage either by providing ramps at building entrances or providing mini elevators inside the space.. etc. another available option is designing for a special disability (e.g. : designing a school for visually impaired ..Etc.) , but do we have school designed in a way that can receive students of different needs all at the same time for instance?

Inclusive design – opportunities for all

The fact is there are no actual applications of interior spaces designed to cover variety of needs all at the same time. The rare examples found, show keeping in consideration one disability or two at a time. Still this confirms an issue in understanding the real meaning of inclusive design or may be the disability to designing the right way. .But is inclusive design really about covering users with different disabilities only anyway?.

There are many dimensions to this term. By analyzing the official definition of inclusivity, it's about creating opportunities to all which means not only physical disabilities, on the contrary different mental disabilities as well as very other seemingly natural factors like age or gender difference that should be very much kept in consideration.

How does any of the designs we see around keep in consideration age difference of users with in their design? And do all designs we have around (especially public interior spaces) keep in mind cultural back ground differences for instance?
As a matter of fact , there are some lesser prominent factors that are not kept in consideration at all and that can definitely impact user experience and his sense of inclusion and belonging to society.

Can you imagine that including sign boards in a certain language with in a public interior space (e.g.: A station or any other public interior space) can negatively impact users who do not know this certain language and can make him feel excluded?, and what about illiterates who unfortunately hold a high percentage in a myriad of developing countries ? Isn't this a kind of difference (need) completely ignored?.

Unfortunately even the most prominent differences, known to be the most ones being kept in consideration while designing any interior space (physical disabilities as an example) still do not achieve inclusion the right way.

Trying to design in a way that doesn't show a special treatment in interior space is the real challenge and the right way to apply inclusive design and another aspect that not many people realize.

By designing an interior space that makes the user with disability feel his difference and obliging the user to use a certain area in the interior space due to his difference is still a form of discrimination that many can be not aware of though it can have an enormous negative impact on the user by highlighting his disability in an indirect way.

Mini elevators as an interior space solution for wheel chaired.

Sign boards in transportation hubs

Designing is a powerful weapon that impact users in a direct way. Interior design is no less, on the contrary we design spaces that users tend to use and spend hours at. We are not just designers, we are healers. But are designers really aware of their importance and how do they impact humanity? Sadly, most of the designers specially in developing countries are not aware of this profession value.

A design solution highlighting the disability though covering the need.

Design solution integrating different human needs and creating a visually pleasant design –dissolving differences.

Maybe the reason is non-specialists entering the field, which make professional interior designers feel as if it is an easy deal working as an interior designer. That is not the case at all! A lot of unprofessionals do not have the enough background of different design approaches including inclusive design till date, dealing with the major in a very inadequate way.

By applying inclusive design guidelines the right way and try to include all user needs, it will definitely cover user's life fundamental needs that can be translated to the need to feel accepted, the need to feel a part of the society that will automatically have a positive impact on users and their contribution to society.

Unfortunately, most of the affected People end up isolating themselves for fear of bullying or receiving unacceptance which automatically impact their health even more.

The ugly fact is that inclusive design guide lines are just theories that are still not put to practice the right way till today. And here come the important questions... questions that have been kept unanswered for the longest time now, sense inclusive design first appeared since the 1950s!
Is the real reason for lack of application a lack of knowledge from the designer's side? Or is it the project budget limitations?

If it's about budget limitation, so why isn't at least applied in public spaces, the public services that are served to citizens as their main rights? Why don't we see this approach applied in the design of public interior spaces (e.g.: transportation stations)? Or other public services? And if it's lack of knowledge from designer's part, by admitting it at least we can control Future designer's knowledge.

Sustainable development goals 2030.

The way interior design major is taught in faculties of Art and design in general can definitely impact the way interior spaces will be designed in the future. Education plays an important role in shaping designers' personality, and though this a very well-known fact, teaching interior design major is still outdated in many aspects.
There are definitely trials to include projects that solve current society problems with in faculty years, which include new design approaches that goes with Sustainable development goals within different student projects especially in graduation projects, still there are some design approaches that are too important and must be included as separate unit courses to be taught through junior years and not just included as requirements with in projects and definitely inclusive design should be on the top of this list.

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Teaching inclusive design as a unit course and try to apply it practically from college years can enhance a sense of importance to students (designers to be) to the topic, in addition to them appreciating their major more and realizing its role and impact on society even more , still teaching and applying inclusive design the right way needs a constant eye on variable human needs which is closely associated with everyday life struggles and this age diseases which are constantly changeable (e.g. : anxiety and other new mental diseases that appeared recently).

To sum it up, including inclusive design within interior design curriculum will definitely highlight its importance as a fundamental designing tool that isn't applied rightfully till now in the real world in spite of its long history, and keeping oneself updated with changeable human needs starting from the least prominent ones is a must for a rightfully applied one.

So, what is the world waiting for? We have the tools to achieve most of sustainable development goals assigned till 2030 through applying some of the design approaches that have been around for the longest time without actual application for better future interior spaces.

By Applying Inclusive design approach, the least that can be achieved is gender equality through design in addition to establishing a good health and wellbeing by covering different human needs and guaranteeing peace and justice.

Effect of the melt-mixing condition on the physical property

of poly(L-lactic acid)/poly(D-lactic acid) blends

By : Dr. Esraa El-Khodary

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ABSTRACT:

The effect of the mixing condition in a mill-type mixer on the thermal property and the crystal formation of the poly(L-lactide)/poly(D-lactide) blends is investigated. The blends melt-mixed at 200 and 210 8C under application of a high shear flow tend to show a single melting peak of the stereocomplex crystal (SC) in the differential scanning calorimetry first and second heating processes without indicating the trace of the melting of homo-chiral crystal. The mixing at an elevated temperature causes a serious thermal degradation. Further kneading of the blends at an elevated temperature higher than Tm of SC causes the transesterification between the same enatiomeric chains forming block copolymers of L- and D-chains. This block copolymer acts as a nucleating agent of SC and the compatibilizing agent between poly(L-lactide) and poly(D-lactide) and promotes the formation of SC. VC 2017 Wiley Periodicals, Inc. J. Appl. Polym. Sci. 2017, 134, 45489.

KEYWORDS: biopolymers and renewable polymers; blends; crystallization; differential scanning calorimetry; thermoplastics Received 26 February 2017; accepted 28 June 2017
DOI: 10.1002/app.45489

INTRODUCTION

Lactic acid (LA), one of the a-hydroxyl acids, is considered to be the chemical starting point for all kinds of poly(lactide) (PLA). In most cases LA is derived from natural sources and can be polymerized to various kinds of PLAs which are proc- essed into fibers, films, and injection-molded parts.1 It is among the most widely used polyesters in the production of biomedical devices such as drug delivery system and implants. These kinds of materials are easy to process into any desired structure with minimal risks of toxicity since it is hydrolytically degradable.

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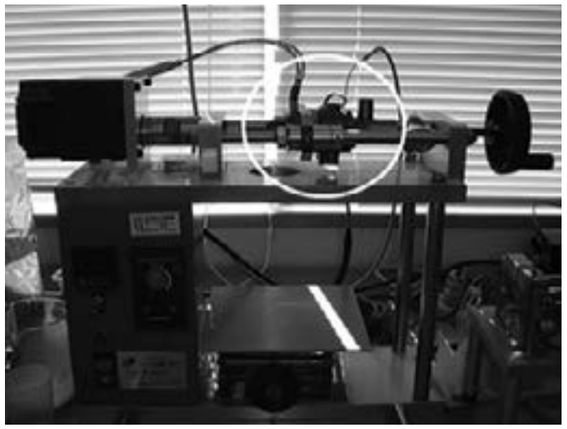
Degradation behavior and mechanical performance are the main features used when differentiating between characteristics.2 Since LA is a chiral molecule, it exists in two stereoisomeric forms, L-LA and D-LA. Although both LAs can be produced by the LA fermentation from various sugars individually, the chem- ical synthesis of LA usually gives a racemic LA, a mixture of D- LA and L-LA. While L-LA and D-LA can be polymerized to poly(L-lactide) (PLLA) and poly(D-lactide) (PDLA), respectively, the crystalline aliphatic polyesters, the racemic LA gives a non- crystalline polyester, poly(D,L-lactide).1 The optical purity of LA is essential in the production of high-performance PLLA and PDLA, since the presence of small amount of impurities results not only in the decrease of the melting point but also decrease in crystallinity. In recent years, crystallization behavior of PLLA caught a lot of attention by researchers and this was due to the degree of crystallinity (Xc) which signifies the performance of PLA. It has been known that PLLA has a slow crystallization rate which limits its uses to plastics or film applications since it is very brittle.3 Nowadays, different methods are being used to improve the properties of PLA, such as nanocomposite technol- ogy, blending technology, crosslinking technology, and stereocomplexation.4–6 Stereocomplexation is an effective method to improve the heat resistance and crystallization volume of PLA, which is considered to be an essential matter in the industrial sector in addi- tion to the commodity applications.7 The stereocomplex crystal (SC), which forms in an equal blend of PLLA and PDLA, has a high melting temperature as high as 2308C, about 508C higher than that of PLLA or PDLA homo-chiral crystal (HC) as well as the rate of crystallization.8,9 Because of these superior proper- ties, PLA which consists of this SC is expected to be a high- performance material. Since the first report by Ikada et al.,8 the effects of various parameters including blending ratio,10–17 molecular weight,10–13 optical purity,14,15 and blending condi- tion on the stereocomplexation between PLLA and PDLA10,12–14 have been intensively studied.



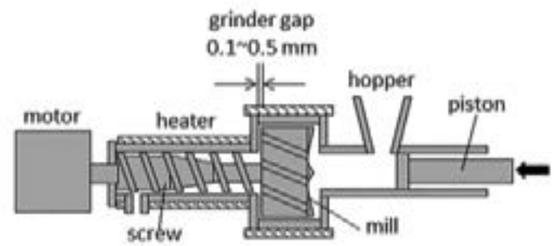


Figure 1. Photograph and a schematic diagram of the mill-type melt- mixer used in this study.

However, the simple melt-blending of PLLA and PDLA at an ele- vated temperature usually resulted in the PLA which consists of both HC and SC and the high performance cannot be expected.18–21 Masaki et al. have prepared the PLLA/PDLA blend which only shows SC in a repetitive heating and cooling processes through kneading equal amounts of PLLA and PDLA at a temperature rang- ing between the melting temperatures of HC and SC, and succeed- ing melt-mixing at a temperature higher than the melting temperature of SC.9 It was suggested that the formation of block copolymer of LA and DA during mixing and extrusion at an ele- vated temperature promoted the SC formation. The fibers drawn to several times at an optimum condition showed a broad wide-angle X-ray diffraction (WAXD) reflection at around 178. This broad WAXD reflection completely transferred to sharp and strong reflec- tions of SC after annealing at an elevated temperature.
Recently, Bao et al. obtained the PLLA/PDLA blends which tend to crystallize only to the SC

by blending component polymers in an internal mixer at a temperature lower than 220 8C.22 Liu also reported similar results of the preparation of PLLA/PDLA blends in an internal mixer at low temperatures.23 These results strongly indicate that it is necessary to forcefully make SC in the blending process to obtain PLLA/PDLA blends which crystallize only to SC.

In this study, PLLA and PDLA with high molecular weights were melt-blended in a mill-type melt-mixer used previously by Masaki et al. at various heating conditions.9 The conditions that were used in this study varied between change in temperature and change in mill gap. These changes affected the crystallization of the blends and eventually the stereocomplexation. Blends prepared were then examined to detect the higher order structures and the thermal properties. This is to determine the optimum blending condition for the polymers which achieves the stereocomplexation without forming HC. Furthermore, it is interesting to observe the possibility of the formation of block copolymer due to the ester transfer reaction as Masaki et al. suggested.

EXPERIMENTAL

Preparation of PLLA/PDLA Blend

PLLA (Mn 51.16 3 105, Mw 52.90 3 105, and OP599.9% ee) and PDLA (Mn 51.18 3 105, Mw 52.83 3 105, and OP599.9% ee) were used in the process. ee stands for “Enatiomeric excess” which is the measurement of purity used of chiral substances where it reflects the degree of which a sample containing more amounts of one enantiomer than the other. Granules of these pol- ymers were dried at 808C for 3 h and 1208C for 12 h under vac- uum just before melt-mixing.

Melt-blending was carried out using a melt-mixer (PPK mini, Imoto Manufacturing Co. Ltd.) which is the same apparatus used by Masaki as schematically shown in Figure 1.9 This mixer con- sists of a piston, a mill, and a screw. The mill has blades and mixes the materials and gives a high shear to the blend melt. The mill gaps were set at 0.1, 0.3, and 0.5 mm which gives the shear rate range of 690–1,730, 230–576, and 138–345 s21, respectively. The screw connected to the mill conveys the blend melt or pow- der to the die exit. The temperatures of the mill and the spinneret ranged from 190 to 230 8C. The rotation speed of the mill con- trolled the output rate. However, it was set at 110 rpm in this study. The mill gap only slightly affects the output rate. Equal amount of PLLA and PDLA were fed to the mixer and the solid granule was obtained.

Film Preparation

The granule prepared in the mixer was then melt kneaded again in a laboratory scale screw extruder at 250 8C and quenched in ice water. Both the blends as-mixed and melt kneaded again were compressed molded by using a hot press machine (Mini Test press 10MP-1FH, Toyo Machinery Co., Ltd., Tokyo, Japan) at 2508C into films 150 lm thick. The molded films were quenched in ice water.

Thermal Property

Thermal property was determined by using a differential scan- ning calorimetry (DSC3100SA, Bruker AXS) under a nitrogen flow and at a heating and cooling rate of 10 8C/min. A sample of approximately 2.0 mg was heated up to 250 8C in the first scan, cooled down to 40 8C, and heated again to 250 8C. Alumina was used as a standard. The crystallization and the melting tempera- tures (Tc and Tm) and the enthalpies of crystallization and fusion (DHc and DHm) were determined from the DSC curves.

Higher Order Structure

The crystalline structure of the blends was examined by using a WAXD (RINT-2100-FSL, Rigaku). Nickel filtered X-ray with a wavelength of 0.1254 nm was radiated at 40 kV and 20 mA. Higher order structures of the films were analyzed by taking WAXD spec- tra which was obtained on a flat imaging plate using a nickel- filtered Cu Ka radiation of wave length 0.1542 nm from a sealed beam X-ray generator (RAD2C, Rigaku) operating at 40 kV and 20 mA.

13C NMR Spectrum

600 MHz 13C NMR spectra were recorded on a Bruker AV600 spectrometer for samples dissolved in deuterated chloroform (CDCl3) containing 5 vol % of 1,1,1,3,3,3-hexafluoro-2-propa- nol with tetramethylsilane as an internal reference.

RESULTS AND DISCUSSION

Appearance of the Extrudates

When the melt-blending was carried out at temperatures rang- ing from 190 to 210 8C, granular solids were extruded from the mixer. The molten blends were extruded at higher mixing tem- peratures. The appearances of the blends prepared at 190 and 2308C are shown in Figure 2(a,b). The blends prepared at the temperatures between 190 and 2108C are white in color.

However, those prepared at 220 and 2308C were pale brown suggesting the occurrence of serious thermal degradation. The thermal degradation during the blending is demonstrated in Figure 3 where the molecular weights of the blends are plotted against the mixing temperature. The molecular weight decreased mildly at the mixing temperature up to 210 8C and it decreased seriously at higher mixing temperature. The degradation of the blend reflected on the color of the blend as described above.

Thermal Properties of the Blends

It has been known that PLLA and PDLA show a melting of HC around 1708C and the melting temperature decreases with the decrease of optical purity.13 The rate of HC formation is known to be quite low and DSC curve obtained in the cooling process at 108C/min does not show any crystallization of exothermic peak. Figure 4(a–e) shows the DSC curves of the blends pre- pared at various mixing temperatures setting a mill gap at 0.1 mm. Curves obtained in the first heating, cooling, and the second heating processes are presented. In the first heating pro- cess, most of the blends except for that prepared at 2208C showed a single melting peak of SC at around 2308C without showing any trace of the crystallization exotherm indicating that the blends were almost completely crystallized in the mixer or after extruded from the mixer in molten state.

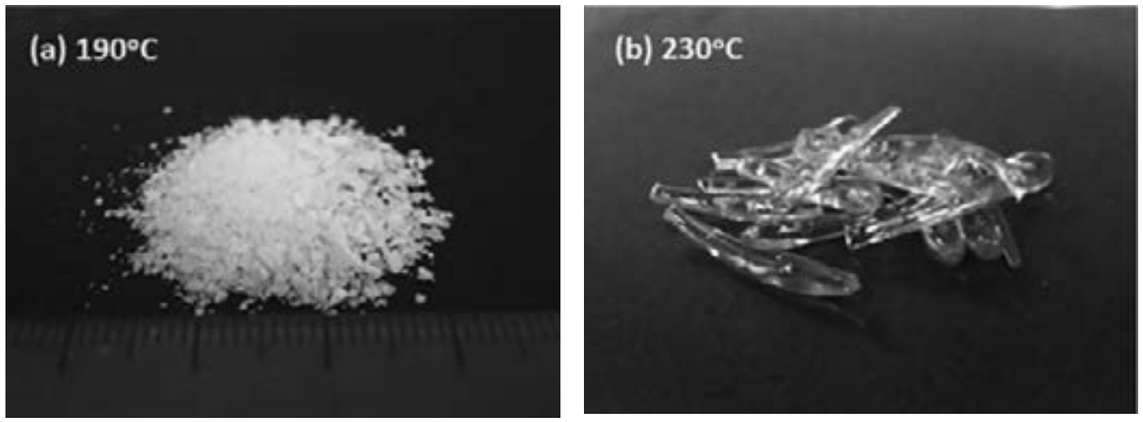


Figure 2. Appearance of the blends extruded at (a) 190 and (b) 230 8C.

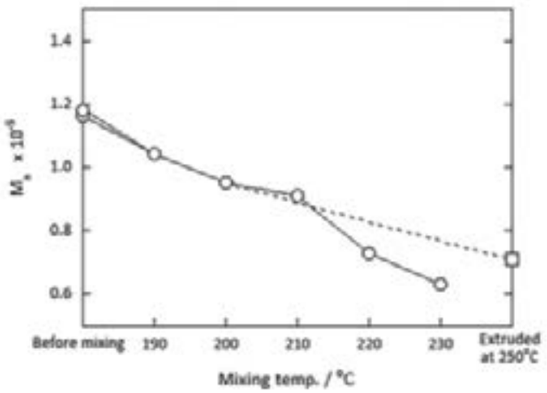


Figure 3. The change in the molecular weight of the blends with mixing temperature setting the mill gap at 0.1 mm.

All blends showed a crystallization peak around 130 8C in the cooling process. Since the formation of HC cannot be observed at this cooling rate, this peak is attributable to the formation of SC. In the second heating process, all the blends showed a small and broad endothermic peak attributable to the melting of HC around 170 8C and a large endothermic peak attributable to the melting of SC around 215 8C.

Figure 5(a,b) shows the similar DSC curves of the blends prepared at 200 8C setting the mill gap at 0.3 and 0.5 mm. The blend prepared at 0.3 mm of mill gap showed a very similar tendency that has been observed for the blends prepared at 0.1 mm of mill gap. On the other hand, the blend prepared at a mill gap of 0.5 mm showed significantly different tendency in the cooling and the second heating DSC pro- cesses. No obvious crystallization peak was observed in the cooling process and a sharp crystallization peak and a sharp melting peak were detected in the second heating process at 104 and 175 8C which are attributable to the crystallization and melting of HC. Only a small and broad melting peak of SC was detected at 218 8C.

The results of the DSC measurements are summarized in Table I. All the blends showed 60–100 J/g of fairly large melting enthalpy in the first heating process. The blends prepared at 0.1 and 0.3 mm mill gaps showed a crystallization peak in the cooling process indicating almost complete stereocomplexation in the cooling process. So, further crystallization did not occur in the second heating process. On the other hand, those prepared at 0.5 mm mill gap did not show any trace of crystallization peak in the cooling process except for that prepared at 2308C. These blends showed a large crystallization peak of HC in the second heating process. Enthalpy of fusion of HC and SC in the second heating process clearly indicates the tendency of the blends pre- pared at the wider mill gap to form both HC and SC. These results suggest that the high shear flow applied to the blends by setting the mill gap narrower promoted the formation of SC and suppressed the formation of HC.

It should be noted that the blends prepared at 2308C showed a large melting peak of SC without showing large melting peak of HC regardless of the mill gap. This may be due to the severe ther- mal degradation during the mixing at an elevated temperature. The color of the blend prepared at 2308C was pale brown. Tsuji showed that the SC formation occurs in preference than HC for- mation when the molecular weight is rather low.

Crystalline Structure

Figure 6 shows the WAXD spectra of powder blends prepared at various temperatures with a setting mill gap of 0.1 mm. The PLLA and the blends prepared at 200 8C, with a setting mill gap of 0.3 and 0.5 mm, were also presented for comparison. The PLLA showed reflections at 2u around 128, 178, 198, and 22.58 indexed as (101), (110)/(200), (201)/(111), and (102)/(210) of the a-form HC.25 On the other hand, the granular solids prepared at temperatures between 190 and 210 8C showed reflec- tions at 2u around 128, 208, and 238 indexed as (100)/(010)/(–110), (110)/(–120)/(–210), and (200)/(020)/(–220) of SC, respectively, while no reflection of HC was detected.26 These results indicate the effective formation of SC in the blends prepared in this temperature range. However, when the blends were prepared at 220 and 230 8C, the WAXD spectra showed two weak peaks at 178 and 198, which are attributable to the reflections of HC.

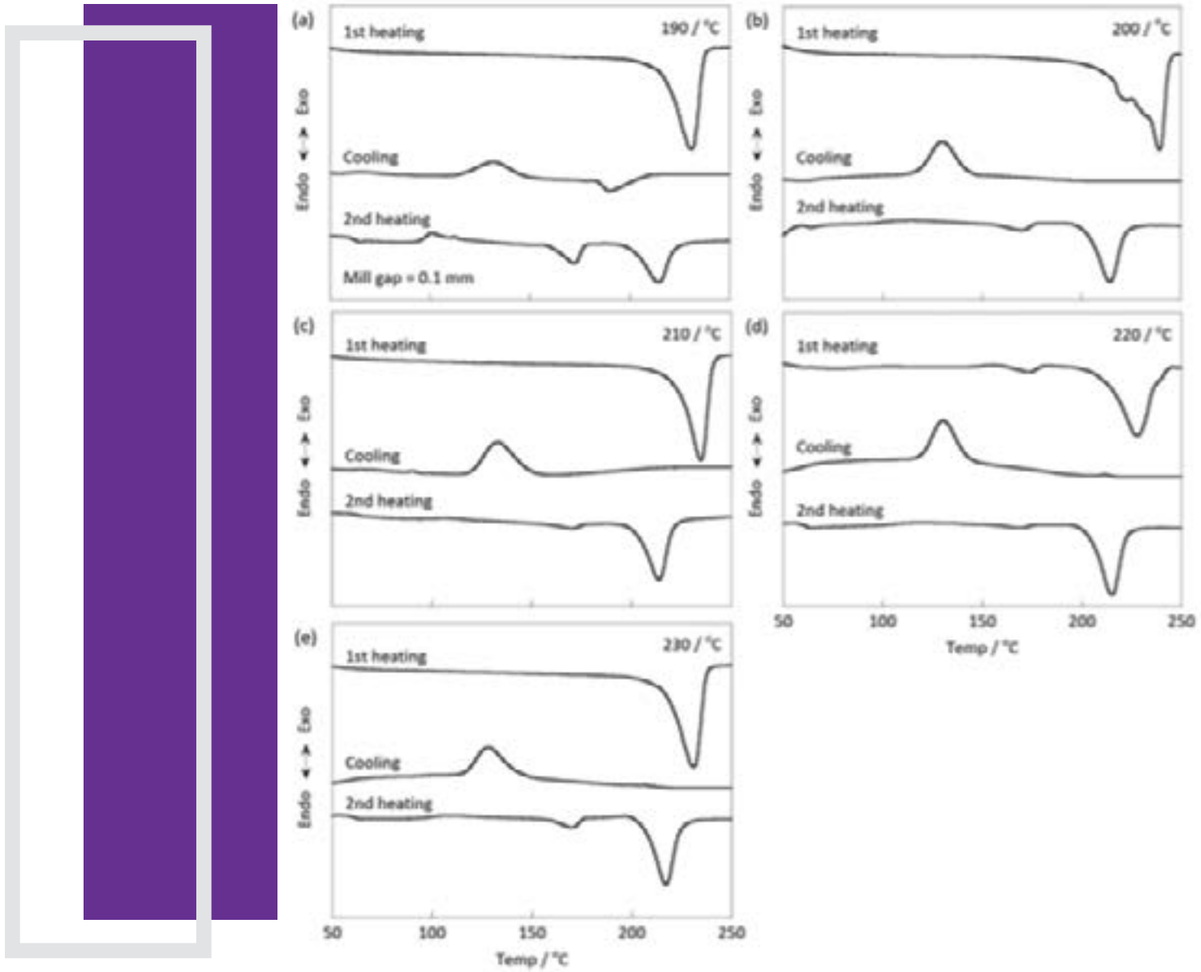


Figure 4. DSC curves of the blends prepared at various temperatures setting a mill gap at 0.1 mm.

Stereocomplexation in the Compression-Molded Amorphous Films

The mixing of PLLA and PDLA at temperatures 200 and 210 8C setting a mill gap narrower than 0.3 seems to be the optimum condition to prepare the PLLA/PDLA blend which forms only SC as a crystalline structure. DSC studies revealed that the blends prepared in this condition can form only SC in the cooling process from the melt. Generally, polyesters which have Tg higher than room temperature like poly(ethylene terephthal- ate) and PLA, for example, are processed into amorphous preform such as melt-spun fibers and melt-cast films. A second- ary formation process is applied to

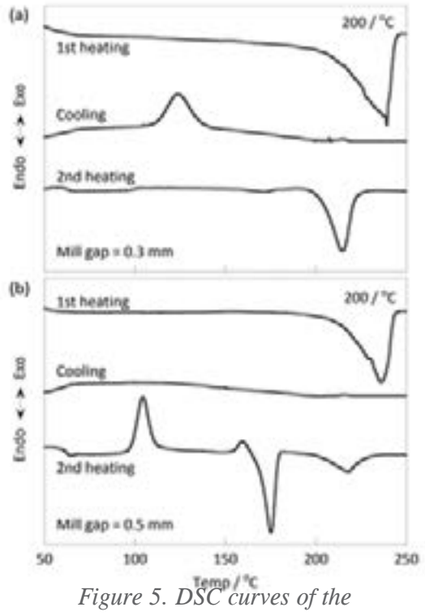


Figure 5. DSC curves of the blends prepared at 200 8C setting mill gaps at (a) 0.3 and (b) 0.5 mm.

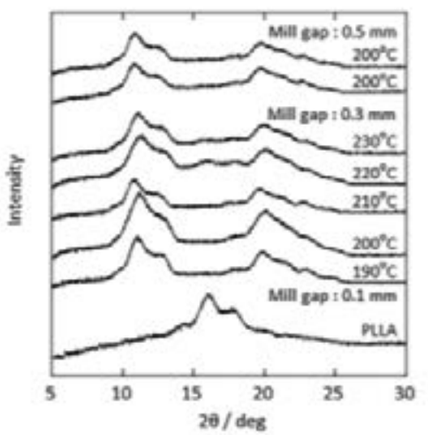


Figure 6. WAXD spectra of the blends prepared at various temperatures setting a mill gap at 0.1 mm. Data for the pure PLLA and the blends pre- pared at 2008C setting mill gaps at 0.3 and 0.5 mm are added for comparison.

allow a molecular orienta- tion as well as to promote the crystallization. To conclude, prepared PLLA/PDLA blends have to be melt-processed at a temperature higher than Tm of SC and quenched into amor- phous state.
A blend granule of PLLA/PDLA prepared at 2008C setting the mill gap at 0.1 mm was melt-kneaded again in a laboratory scale screw extruder at 250 8C and quenched in ice water. Both of the blends as-mixed and melt-kneaded again were compres- sion molded by using a hot press machine at 2508C and then quenched in ice water to obtain amorphous films.

Figure 7 shows the DSC curves of the films of the blends after compression molding, (a) as melt-mixed and (b) melt-mixed and kneaded. Since both films are in the amorphous state, a sharp crystallization peak was observed around 908C.

However, these films show quite different melting behavior. The blend film as-mixed showed another small exothermic peak around 1508C followed by a sharp melting peak at 1758C and a fairly broad melting peak around 2208C. These two melting peaks can be attributable to those of HC and SC. When comparing the peak areas of the mixed film peaks, it is observed that exo- thermic peak at 93 8C which is attributable to the formation of SC while the peak detected at 1508C may be the crystallization of HC which immediately melts at slightly higher temperature.
On the other hand, the film mixed and kneaded show very sim- ple DSC curve, a sharp crystallization peak at 90 8C, and a sharp melting peak at 220 8C.

When SCs are formed, the storage modulus of the blends is pre- served until the temperature has reached to the melting point of crystallites, subsequently, the most relevant temperature range of PLA will greatly broaden. Due to the results obtained, it is suggested that the mechanism of the formation of the blends allows it to only crystallize into SC without forming any HC as shown in Figure 8. Both of the components PLLA and PDLA melt in the mixer at a temperature between Tm of HC and that of SC. The mixing process allows large interface between PLLA and PDLA melts which results in the formation of SC at the interface. Hence SC solidifies rapidly, a mixture of both solid and melt is processed allowing a high efficient mixing proce- dure.

Table 1. Enthalpies of Fusion and Crystallization Detected in the DSC First Heating, Cooling, and the Second Heating Processes

Mixing temperature (°C)	Mill gap (mm)	Enthalpy of fusion of SC in the first heating (J/g)	Enthalpy of cryst. in the cooling (J/g)	Enthalpy of cryst. in the second heating (J/g)	Enthalpy of fusion of HC in the second heating (J/g)	Enthalpy of fusion of SC in the second heating (J/g)
190	0.1	72.8	16.8	0.0	10.2	27.4
	0.3	82.9	36.6	0.0	0.0	48.8
	0.5	80.9	0.0	29.2	34.7	20.0
200	0.1	84.7	30.2	0.0	4.3	35.6
	0.3	100	33.3	0.0	1.5	42.5
	0.5	73.5	0.0	30.0	39.2	16.9
210	0.1	68.2	30.7	0.0	2.2	35.3
	0.3	78.9	27.5	1.0	4.5	38.0
	0.5	55.2	0.0	19.8	31.4	16.5
220	0.1	61.8	33.8	0.0	1.9	40.2
	0.3	77.5	31.7	0.0	4.8	44.9
	0.5	76.2	0.0	16.0	35.1	20.6
230	0.1	66.4	30.9	0.0	5.6	45.0
	0.3	81.5	34.2	0.0	2.7	44.4
	0.5	66.7	53.8	0.0	0.0	53.9

Probably, it is due to the application of high shear that occurs within the mixer which promotes the SC formation resulting in a solid granule filled with SC [Figure 8(a)]. PLLA and PDLA chains align side-by-side alternately. But when the shear flow applied is rather mild, blends which have both HC and SC tend to go through crystalline phases [Figure 8(b)]. When the blend filled with SC is kneaded again at the temperature higher. than Tm of SC, PLLA and PDLA chains mixed at a high molecular level cannot be separated easily into the pure domains of PLLA and PDLA.

Furthermore, the transesterification efficiently occurs between PLLA and PDLA chains nearby producing the block copolymer consisting of L- and D-blocks when the blend was kneaded at an elevated temperature [Figure 8(c)]. On the other hand, the transesterification occurs between the same enatiomeric chains resulting in the change of the molecular weight [Figure 8(d)]. The block copolymer produced would act as a nucleating agent for SC formation. The mixing process at a low temperature has achieved the mixing of PLLA and PDLA in a high molecular level, and this state was frozen in the SC phase. The kneading pro- cess at an elevated temperature higher than Tm of SC stabilized this state due to the formation of the block copolymer. Yokohara and Yamaguchi also prepared the PLLA/PDLA blends at the same tem- perature conditions but at a constant mill gap value and this is to obtain thermally stable PLA melt-spun fibers.5

The possibility of the formation of block copolymer of LA and DA was determined by using 13C NMR. Figure

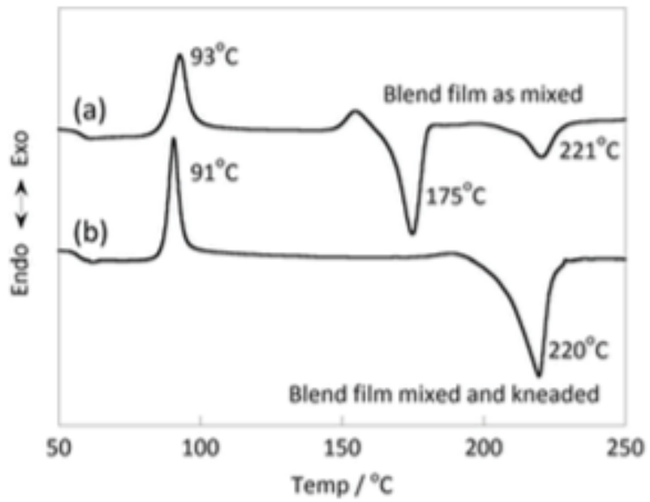


Figure 7. DSC curves of the amorphous blend films (a) as melt-mixed and (b) melt-mixed and kneaded.

9 shows a car- bonyl region of 13C NMR spectra of the PLLA/PDLA solution blend, the melt-blend prepared at 200 8C, and the melt-blend fur- ther extruded at 250 8C. The main peak centered at 170.5 ppm for the solution blend indicates the appearance of meso (m)-rich sequences. This peak slightly shifted to higher magnetic field for the melt-blend and further shifted much higher field for the blend extruded at 250 8C.

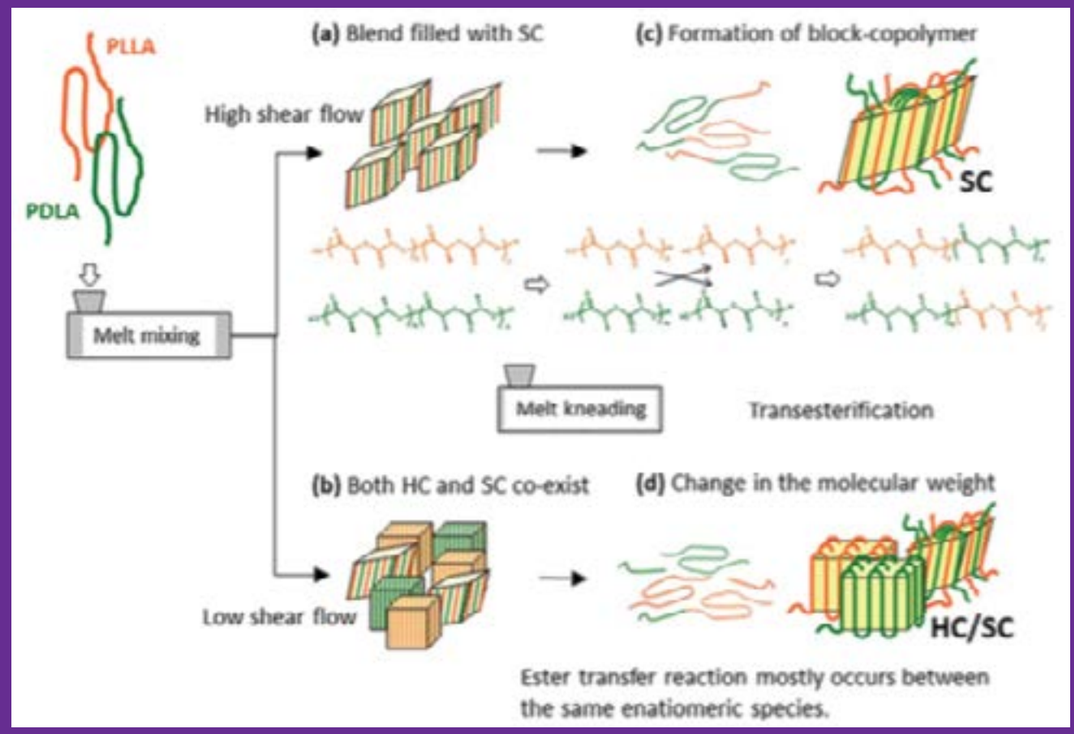


Figure 8. Mechanism of the stereocomplexation in PLLA/PDLA blends. [Color figure can be viewed at wileyonlinelibrary.com]

Moreover, a small new peak, indicated by an arrow in Figure 9(b), was observed in the spectrum of the extruded blend at a slightly lower field of the main C@O peak. This carbonyl peak might be originated from the presence of the units connecting the enatiomeric block sequences. The enatiomeric connection of the PLLA/PDLA, although rarely occurred, possibly causes the interaction between LA and DA blocks, lead- ing to the higher magnetic field shifts of the main peaks of the m-rich sequences and extruded blends as aforementioned.

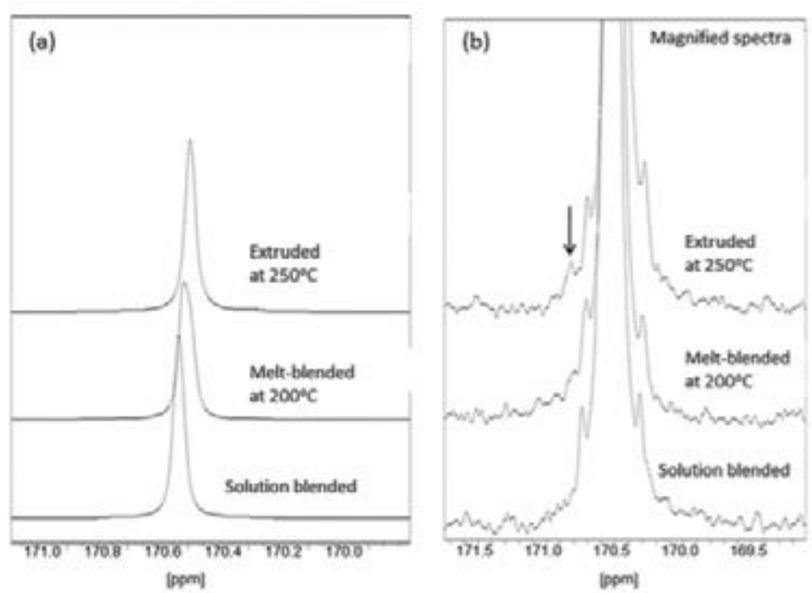


Figure 9. Carbonyl region of 13C NMR spectra of the PLLA/PDLA solution blend, the melt-blend prepared at 200 8C and the melt-blend further extruded at 250 8C.

CONCLUSIONS

The effect of the mixing condition, whether by changing the melt-mixer temperature or the mill gap space, on the thermal property and the crystal formation of the PLLA/PDLA blends were investigated. Equal amounts of PLLA and PDLA were melt- mixed in a mill-type mixer at temperatures higher than of Tm of HC and lower than Tm of SC. Molten PLLA and PDLA were mixed and the SC formed at the interface of two molten compo- nent polymers solidified resulting in the blends filled with SC. The formation of SC seems to be promoted by the application of high shear flow to the molten blends. Kneading of the blends at an elevated temperature higher than Tm of SC caused the transes-terification. The blends consist of both HC and SC crystalline phases, the transesterification mainly occurs between the same enatiomeric chains. On the other hand, the transesterification occurred between PLLA and PDLA chains in the blends, filled with SC, forming block copolymers of L- and D-chains. This block copolymer acts as a nucleating agent of SC and the compatibilizing agent between PLLA and PDLA, promoting the formation of SC.

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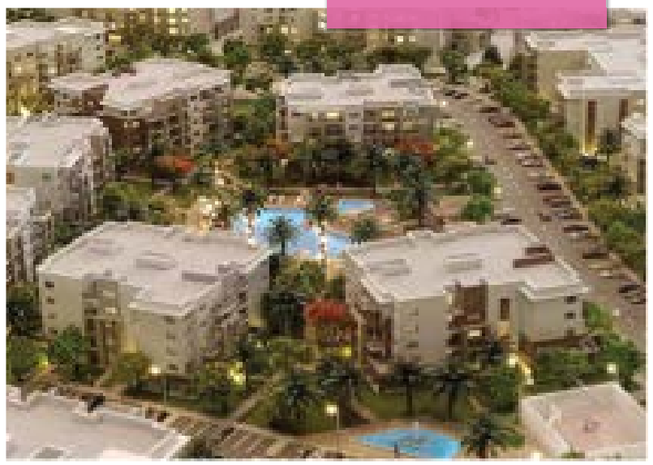
"MEDIUM CHRONOLOGY"
in Cinema and Theatre Major

Article composed and written by: Aïcha Ahmed.

«Relating the person to the whole world “, is what cinema and theatre do according to Jean-Luc Godard. It is the method to find yourself through scenarios you had in mind but never happened, or even did but not as you wanted to experience. You will get to learn from reading and visualizing your surroundings. Thus, you will find out most of what you wonder about by encountering several stages such as the reason of your joining, the importance of doing and the elements that›d push you for such step.



Entitled: “Perfect town sized down” Maquette by Emaar.

First of all, cinema and theatre is a major full of adventures that feels like reading a book or listening to music then getting you transferred to where they direct us to be, with imagination we can be anywhere, anytime, anyhow. Whether wearing our most glorious look or simply wanting some calm loneliness; not that type of unhappy solitude, on reverse it is that favorable pause that breaks away the burn out. In other words, cinema is closest to filmmaking with all the mise en scène and postproduction and likely theatre; except for the settings due to elements scale in relation to location, medium display and personal sentimental experience.

Secondly, this major will drive you further to your persona and educate you about it with style, definition and mostly knowledge. In order to benefit the most, you›ll need to practice your current skills and outgrow them. The previous will occur by research, analysis and application. Also, having the passion and eagerness to learn will enrich you way higher along talent. Moreover, enjoying the process is like watching our most beloved show and not getting enough of it; it will make you release the compression of doing multiple tasks. However, the major will enforce you with the understanding and sophistication towards implementing yourself a concept and a vision with your technique.

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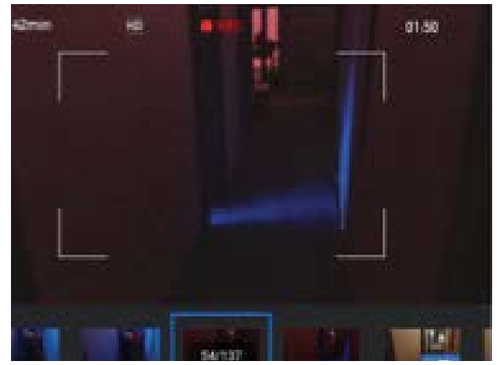
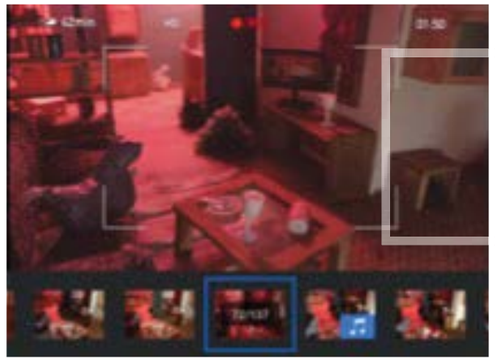
Afterwards, offering specific discipline and dedication will imply the needed impact on you and your work. For instance, being on time, organized and attentive will give others the outlook of a trustworthy character whom reliability has a higher opportunity with being attached to your image.
Not to mention that, references and feedback are one of the most common and essential requirements which will acknowledge your efforts, characteristics and mind. You will reach a phase when you are assured of your abilities and by then be able to decide yourself whether your personality is present and what you want to offer is close to what›s agreed on.



“Drunk & Stolen”
Maquette Original Works for Poduction.



Furthermore, the audience stage will teach you two majors’ amplifications: beginning with embracing judgement with no fear of apprentice and making modifications with ease and secondly exploiting through negotiation the upmost level of your design.
Your chance to do so is existing with your mentors and connections, consequently you by time shall know what you disregard or keep.

By that you would be developing your creative problem solving, oral communication, independent work and cooperative initiative skills. Nevertheless, all genres are open to critic and the expectancy of having absolute constant results are not possible, at least not very often, that is why being careful with what to add, edit or remove is important too.

Nonetheless, the cinematic and theatrical adaptations have their own ventures, each deliver a directing message with an assembly of a team. In fact, the human resource management improves work; for it empowers the participation part. Since some tasks could feel endless, a subdivision could be helpful. Each member shall stick to their role and accordingly all steps will pour into a single, gathered, well work on project. Sometimes, budgeting nor time aren›t enough and for that you ought to be ready and flexible to such obstacles.

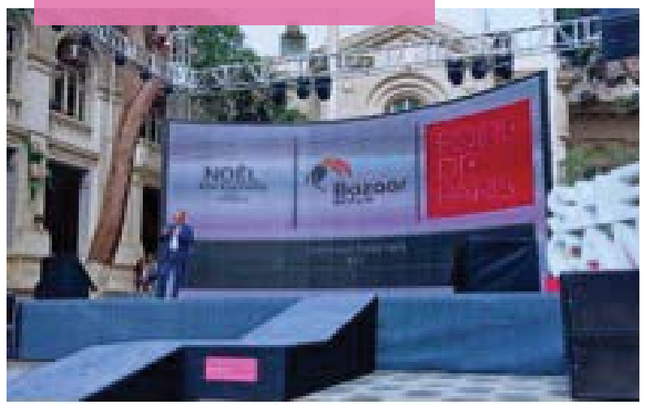
By being solution oriented, you provide gain and commitment. Perhaps, few responsibilities seem easier than others but at the end it›s what you are built for and are able to relate to that would reveal best. Your contribution could make a huge difference, when you study and work hard for what you are asked to do. Even making yourself a simple questionnaire aside, could open up more ideas and concepts which support your main and essential requirements.

By being solution oriented, you provide gain and commitment. Perhaps, few responsibilities seem easier than others but at the end it›s what you are built for and are able to relate to that would reveal best. Your contribution could make a huge difference, when you study and work hard for what you are asked to do. Even making yourself a simple questionnaire aside, could open up more ideas and concepts which support your main and essential requirements. Apart from being in studio or at your office with books and manual tools, attending external conferences, live events, opera backstage or workshops will help so much when you realize that your curriculum is real and serious. Besides, absorbing physically the experience will strike your mental memory into a feeling or an inspiration; due to your existence within all elements finalized ahead you at once.

Owing to the fact that having your sketch book with you anywhere is actually a smart tool to record a word, a croquis or a name of a symphony orchestra at a café or elsewhere. This means that the time you fetch it; you would have made unintentionally your dictionary of worlds to try out. Despite the possibility of losing an item alike, your brain would guide you through the episode priory mentioned, discussed or captured. While the backup could fail, it is still crucial to save a secondary copy and note down its place just in case, plan B rescues when urgent.

To conclude it all, your background and special uniqueness will lead you where you work hard for. Audience will care when you are remarkable, your response will represent your investment from time to recognition as well as your consciousness. As a result, confidence would produce persuasive communication that speaks your ideas. Protect your ideas and build your voice because it matters, the latter, the major will be your friend and the field will be your future.

In theory rules are applied but in practice they might not be, therefore be careful always with what you present yet believe in yourself and have faith in God. Remember if you had a surprising situation, face it with true comprehension and actual records of yours; even if you had to improvise, offer the world some of yourself and your culture.



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