Rapid Prototyping. Principles and Applications

Description: Rapid prototyping is a faster, more cost-effective method for building prototypes from three-dimensional computer-aided design (CAD) drawings. Rapid Prototyping provides a fundamental overview of the general manufacturing process and presents the principles and applications of designing and fabricating parts in a format that makes learning easy. This user-friendly text features basic information on layered manufacturing processes, the essential vocabulary of nomenclature, numerous review exercises, case studies, a full section of rapid prototyping applications, helpful material for further study, applications to real-world problems, and more.

Contents:

Preface.

Acknowledgments.

About the Author.

1 Introduction.

1.1 Introduction.

1.2 World of RP.

1.3 History of RP.

1.4 Development of RP Systems.

1.5 Applications in Education and Industry.

1.6 Case Study: Fabricating a Prototype Using 3D Printing.

1.7 Summary.

2 Principles of Rapid Prototyping.

2.1 Principles of Automated Processes.

2.2 RP Fundamentals.

2.3 Problems with STL File Format.

2.4 Other Translators.

2.5 Case Study: Designing and Prototyping a Spur Gear.

2.6 Summary.

3 Liquid-Based RP Systems.

3.1 Classification of RP Systems.

3.2 3D Systems' Stereolithography Apparatus (SLA).

3.3 D-MEC's Solid Creation System.

3.4 CMET Solid Object UV Laser Plotter.
3.5 Summary.

4 Solid-Based RP Systems.
4.1 Stratasys' Fused Deposition Modeling Systems.
4.2 Helysis Laminated Object Manufacturing System.
4.3 Solidscape's 3D Printing and Deposition Milling.
4.4 3D Systems' Multijet Modeling System.
4.5 KIRA's Selective Adhesive and Hot Pass (SAHP) System.
4.6 Summary.

5 Powder-Based RP Systems.
5.1 3D Systems' Selective Laser Sintering.
5.2 MIT's Three-Dimensional Printing.
5.3 Z Corporation's Process (Z406 System).
5.4 Soligen's Direct Shell Production Casting.
5.5 EOS's Laser Sintering Systems.
5.6 e-Manufacturing using Laser Sintering.
5.7 Summary.

6 Materials for Rapid Prototyping.
6.1 Introduction.
6.2 Types of Materials.
6.3 Liquid-Based Materials.
6.4 Solid-Based Materials.
6.5 Powder-Based Materials.
6.6 Case Study.
6.7 Summary.

7 Reverse Engineering.
7.1 Introduction.
7.2 Measuring Devices.
7.3 CAD Model Construction from Point Clouds.
7.4 Data-Handling and Reduction Methods.
7.5 Applications and Trends.
7.6 Case Study.
7.7 Summary.
Appendix D: RP Software Developers.

Appendix E: RP Material Suppliers.

Glossary.

List of Abbreviations.

Index.

Ordering:

Order Online - http://www.researchandmarkets.com/reports/2217602/

Order by Fax - using the form below

Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

Product Name: Rapid Prototyping. Principles and Applications
Web Address: http://www.researchandmarkets.com/reports/2217602/
Office Code: SCEJIS8P

Product Format
Please select the product format and quantity you require:

<table>
<thead>
<tr>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Copy (Hard Back):</td>
</tr>
</tbody>
</table>

* Shipping/Handling is only charged once per order.

Contact Information
Please enter all the information below in BLOCK CAPITALS

<table>
<thead>
<tr>
<th>Title:</th>
<th>Mr ☐</th>
<th>Mrs ☐</th>
<th>Dr ☐</th>
<th>Miss ☐</th>
<th>Ms ☐</th>
<th>Prof ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name:</td>
<td></td>
<td></td>
<td></td>
<td>Last Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email Address: *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Title:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postal / Zip Code:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information
Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:
Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB9853308313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:
Marketing Code: ____________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp