Client Code: NVLUS.028CP1

RECORDATION FORM COVER SHEET
PATENTS ONLY

To the Director, U.S. Patent and Trademark Office: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): (List using letters or numbers for multiple parties)

ASM NUTOOL, INC.

Additional name(s) of conveying party(ies) attached?

( ) Yes (X) No

2. Name and address of receiving party(ies):

Name: NOVELLUS SYSTEMS, INC.
Street Address: 4000 N. First Street
City: San Jose **State:** CA
ZIP: 95134

Additional name(s) of receiving party(ies) attached?

( ) Yes (X) No

3. Nature of conveyance:

(X) Assignment ( ) Security Agreement
( ) Merger ( ) Change of Name
( ) Other:

Execution Date: (List as in section 1 if multiple signatures)
December 4, 2006

4. US or PCT Application number(s) or US Patent number(s):

(X) Patent Application No.: 10/723,045
Filing Date: November 26, 2003

Additional numbers attached?

( ) Yes (X) No

5. Party to whom correspondence concerning document should be mailed:

Customer No. 20,995
Address: Knobbe, Martens, Olson & Bear, LLP
2040 Main Street, 14th Floor
Irvine, CA 92614
Return Fax: (949) 760-9502
Attorney's Docket No.: NVLUS.028CP1

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 1.21(h)): $40

(X) Authorized to be charged to deposit account

8. Deposit account number: 11-1410

Please charge this account for any additional fees which may be required, or credit any overpayment to this account.

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct, and any attached copy is a true copy of the original document.

Tina Chen
Name of Person Signing

Signature

February 12, 2007
Date

44,606
Registration No.

Total number of pages including cover sheet, attachments and document: 15

Documents transmitted via Facsimile to be recorded with required cover sheet information to:

Mail Stop Assignment Recordation Services
Director, U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
Facsimile Number: (571) 273-0140

3411181
021207

CH $40.00 111410 10723045

ASSIGNMENT

THIS ASSIGNMENT (this "Assignment") is entered into effective as of December 4, 2006, by the undersigned assignor ("Assignor"), in favor of Novellus Systems, Inc., as assignee ("Assignee"), with reference to the following facts and circumstances:

WHEREAS, Assignor desires to transfer all of its right, title and interest in and to the Intellectual Property identified on the attached Schedule 1 to Assignee.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor, hereby sells, assigns and transfers to Assignee all rights, title and interest, including without limitation, all intellectual property rights, arising out of or subsisting in the Intellectual Property, whether registered and unregistered, and all renewals, extensions and derivative works thereof or therefrom, and further including any and all claims and demands it may have either in law or equity arising out of any past or future infringement of said Intellectual Property. This Assignment shall not waive, limit or modify any other agreement between Assignor and Assignee with respect to the subject matter hereof.

IN WITNESS WHEREOF, Assignor has executed this Assignment below.

ASSIGNOR:

ASM Nutool Inc.

By: _____

Title: General Manager

Acknowledged and Agreed:

ASSIGNEE:

NOVELLUS SYSTEMS, INC.

By: _____

Title: EVP & CFO

139100R

Schedule 1, country US 175 ASM Nitride

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.001	A	Method and Apparatus for Electrochemical Mechanical Deposition	US	09/201929	01-Dec-1998			6176992	23-Jan-2001	Issued	ASMNT
NT.001	C1	Method and Apparatus for Electroplating and Electropolishing	US	10/238665	09-Sep-2002	2003/0006147	09-Jan-2003	6902659	07-Jun-2005	Issued	ASMNT
NT.001	C2	Method and Apparatus for Electroplating and Electropolishing	US	10/292750	12-Nov-2002	2003/0094364	22-May-2003			Published	ASMNT
NT.001	CP	Method and Apparatus for Electrochemical Mechanical Deposition	US	09/738561	14-Dec-2000	2001/0042690	22-Nov-2001	6402925	11-Jun-2002	Issued	ASMNT
NT.001	D	Method for Electro Chemical Mechanical Deposition	US	09/607567	29-Jun-2000			6676822	13-Jan-2004	Issued	ASMNT
NT.002	A	Reverse Linear Polisher With Loadable Housing	US	09/201928	01-Dec-1998			6103628	15-Aug-2000	Issued	ASMNT
NT.002	C	Reverse Linear Chemical Mechanical Polisher with Loadable Housing	US	09/576064	22-May-2000			6207572	27-Mar-2001	Issued	ASMNT
NT.002	CP	Polishing Apparatus and Method with a Refreshing Polishing Belt and Loadable Housing	US	09/684059	06-Oct-2000			6468139	22-Oct-2002	Issued	ASMNT
NT.003	A	Apparatus for Forming an Electrical Contact with a Semiconductor Substrate	US	09/283024	30-Mar-1999			6251235	26-Jun-2001	Issued	ASMNT
NT.003	C	Method for Forming an Electrical Contact with a Semiconductor Substrate	US	10/093185	05-Mar-2002	2002/0088715	11-Jul-2002	6958114	25-Oct-2005	Issued	ASMNT
NT.003	C2	Apparatus for Forming an Electrical Contact with a Semiconductor Substrate	US	11/259694	25-Oct-2005					Pending	ASMNT
NT.003	D	Method for Forming an Electrical Contact with a Semiconductor Substrate	US	09/877335	07-Jun-2001	2002/0029978	14-Mar-2002	6471847	29-Oct-2002	Issued	ASMNT
NT.004	A	Method and Apparatus for Plating and Polishing a Semiconductor Substrate	US	09/285621	03-Apr-1999			6328872	11-Dec-2001	Issued	ASMNT
NT.004	C1	Apparatus for Plating and Polishing a Semiconductor Workpiece	US	10/946703	21-Sep-2004	2005/0034976	17-Feb-2005			Published	ASMNT

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assignee
NT.004	D	Apparatus for Plating and Polishing a Semiconductor Workpiece	US	09/941360	28-Aug-2001	2002/0011417	31-Jan-2002	6797132	28-Sep-2004	Issued	ASMNT
NT.005	A	Vertically Configured Chamber used for Multiple Processes	US	09/466014	17-Dec-1999			6352623	05-Mar-2002	Issued	ASMNT
NT.005	C	Vertically Configured Chamber Used for Multiple Processes	US	11/288948	28-Nov-2005					Abandoned.	ASMNT
NT.005	D1	Vertically Configured Chamber Used for Multiple Processes	US	10/041029	28-Dec-2001	2002/0121435	05-Sep-2002	6969456	29-Nov-2005	Issued	ASMNT
NT.005	D2	Vertically Configured Chamber Used for Multiple Processes	US	10/041058	28-Dec-2001	2002/0056646	16-May-2002	6884334	26-Apr-2005	Issued	ASMNT
NT.007	A	Method and Apparatus for Simultaneously Cleaning and Annealing a Workpiece	US	09/351868	12-Jul-1999			6692588	17-Feb-2004	Issued	ASMNT
NT.008	A	Workpiece Proximity Plating Apparatus	US	09/483095	14-Jan-2000			6630059	07-Oct-2003	Issued	ASMNT
NT.008	C	Workpiece Proximity Etching Method and Apparatus	US	10/744293	22-Dec-2003	2004/0134793	15-Jul-2004			Abandoned.	ASMNT
NT.008	C2	Workpiece Proximity Etching Method and Apparatus	US	11/445594	01-Jun-2006					Pending	ASMNT
NT.008	D	Semiconductor Workpiece Proximity Plating Methods and Apparatus	US	09/976972	11-Oct-2001	2002/0020621	21-Feb-2002	6666959	23-Dec-2003	Issued	ASMNT
NT.010	A	Method and Apparatus for Depositing and Controlling the Texture of a Thin Film	US	09/373681	13-Aug-1999			6409904	25-Jun-2002	Issued	ASMNT
NT.010	D	Method and Apparatus for Controlling the Texture of a Thin Film	US	10/165673	06-Jun-2002	2002/0153256	24-Oct-2002	6837979	04-Jan-2005	Issued	ASMNT
NT.013	A	Chip Interconnect and Packaging Deposition Methods and Structures	US	09/398258	17-Sep-1999			6355153	12-Mar-2002	Issued	ASMNT
NT.013	C1	Chip Interconnect and Packaging Deposition Methods and Structures	US	10/407892	04-Apr-2003	2003/0164302	04-Sep-2003			Published	ASMNT
NT.013	C2	Chip Interconnect and Packaging Deposition Methods and Structures	US	11/295014	06-Dec-2005					Pending	ASMNT
NT.013	D	Packaging Deposition Methods	US	09/905335	13-Jul-2001	2002/0033342	21-Mar-2002	6905588	14-Jun-2005	Issued	ASMNT

Case	Extension	Title	ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.018	A	Methods for Repairing Defects on a Semiconductor Substrate	US 09/534704	24-Mar-2000			6582579	24-Jun-2003	Issued	ASMNT
NT.018	C1	Methods for Repairing Defects on a Semiconductor Substrate	US 10/425783	29-Apr-2003	2004/0035709	26-Feb-2004			Abandoned.	ASMNT
NT.020	A	Plating Method and Apparatus that Creates a Differential between Additive Disposed on a Top Surface and a Cavity Surface of a Workpiece Using an External Influence	US 09/740701	18-Dec-2000	2002/0074230	20-Jun-2002	6534116	18-Mar-2003	Issued	ASMNT
NT.020	C2	Plating Method and Apparatus that Creates a Differential between Additive Disposed on a Top Surface and a Cavity Surface of a Workpiece Using an External Influence	US 11/436857	17-May-2006					Pending	ASMNT
NT.020	DV1	Plating Method and Apparatus that Creates a Differential between Additive Disposed on a Top Surface and a Cavity Surface of a Workpiece Using an External Influence	US 10/358925	04-Feb-2003	2003/0146089	07-Aug-2003			Abandoned.	ASMNT
NT.020	DV1C1	Plating Method and Apparatus that Creates a Differential between Additive Disposed on a Top Surface and a Cavity Surface of a Workpiece Using an External Influence	US 11/200767	09-Aug-2005	2005/0279641	22-Dec-2005			Published	ASMNT
NT.021	A	Method and System to Provide Material Removal and Planarization Employing a Reactive Pad	US 09/969531	01-Oct-2001	2002/0068456	06-Jun-2002	6649523	18-Nov-2003	Issued	ASMNT
NT.021	D	Method and System to Provide Material Removal and Planarization Employing a Reactive Pad	US 10/716116	18-Nov-2003	2004/0102049	27-May-2004			Abandoned.	ASMNT
NT.101	A	Work Piece Carrier Head for Plating and Polishing	US 09/472523	27-Dec-1999			6612915	02-Sep-2003	Issued	ASMNT
NT.102	A	Pad Designs and Structures for a Versatile Materials Processing Apparatus	US 09/511278	23-Feb-2000			6413388	02-Jul-2002	Issued	ASMNT
NT.102	CP1	Method and Apparatus Employing Pad Designs and Structures with Improved Fluid Distribution	US 09/621969	21-Jul-2000			6413403	02-Jul-2002	Issued	ASMNT

Case Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.102 D	Pad Designs and Structures For a Versatile Materials Processing Apparatus	US	10/152793	23-May-2002	2002/0130034	19-Sep-2002			Published	ASMNT
NT.103 A	Modified Plating Solution for Plating and Planarization and Process Utilizing Same	US	09/544558	06-Apr-2000			6354916	12-Mar-2002	Issued	ASMNT
NT.104 A	Anode Assembly for Plating and Planarizing a Conductive Layer	US	09/568584	11-May-2000			6478936	12-Nov-2002	Issued	ASMNT
NT.104 C1	Anode Assembly for Plating and Planarizing a Conductive Layer	US	10/914490	10-Aug-2004	2005/0040049	24-Feb-2005			Published	ASMNT
NT.104 C2	Anode Assembly for Plating and Planarizing a Conductive Layer	US	10/251377	20-Sep-2002	2003/0015435	23-Jan-2003	6773576	10-Aug-2004	Issued	ASMNT
NT.105 A	Device Providing Electrical Contact to the Surface of a Semiconductor Workpiece during Metal Plating	US	09/685934	11-Oct-2000			6497800	24-Dec-2002	Issued	ASMNT
NT.105 C1	Device Providing Electrical Contact to the Surface of a Semiconductor Workpiece during Metal Plating	US	10/302213	22-Nov-2002	2003/0070930	17-Apr-2003			Published	ASMNT
NT.105 C2	Device Providing Electrical Contact to the Surface of a Semiconductor Workpiece During Processing	US	10/459323	10-Jun-2003	2003/0209425	13-Nov-2003			Published	ASMNT
NT.105 C3	Device Providing Electrical Contact to the Surface Workpiece During Processing	US	10/459320	10-Jun-2003	2003/0217932	27-Nov-2003			Published	ASMNT
NT.105 C4	Device Providing Electrical Contact to the Surface of a Semiconductor Workpiece During Processing	US	10/459321	10-Jun-2003	2003/0209445	13-Nov-2003			Published	ASMNT
NT.105 C5	Device Providing Electrical Contact to the Surface of a Semiconductor Workpiece During Processing	US	10/826219	16-Apr-2004	2004/0195111	07-Oct-2004			Published	ASMNT
NT.105 C6	Device Providing Electrical Contact to the Surface of a Semiconductor Workpiece during Metal Plating	US	11/123268	05-May-2005	005/0269212-A	08-Dec-2005			Published	ASMNT

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.107	D	Method to Minimize/Eliminate Metal Coating Over the Top Surface of a Patterned Substrate and Layer Structure Made Thereby	US	1//343477	30-Jan-2006					Pending	ASMNT
NT.108	C1	Novel Conductor Structure for Multi Level Metallization	US	10/663318	16-Jun-2003	2004/0052930	18-Mar-2004	6974769	13-Dec-2005	Issued	ASMNT
NT.108	C2	Novel Conductor Structure for Multi Level Metallization	US	11/302565	12-Dec-2005					Abandoned.	ASMNT
NT.109	A	Method of and Apparatus for Making Electrical Contact to Wafer Surface for Full-Face Electroplating or Electropolishing	US	09/735546	14-Dec-2000	2001/0035354	01-Nov-2001	6482307	19-Nov-2002	Issued	ASMNT
NT.110	A	Anode Designs for Planar Metal Deposits with Enhanced Electrolyte Solution Blending and Proces of Supplying Electrolyte Solution Using Such Designs	US	09/845262	01-May-2001	2002/0162750	07-Nov-2002	6695962	24-Feb-2004	Issued	ASMNT
NT.110	C1	Method of Supplying Solution for Electrochemical Processes from Double Cavity Electrode Housing	US	10/784191	24-Feb-2004	2004/0163963	26-Aug-2004			Published	ASMNT
NT.200	A	Method and Apparatus for Electrodeposition of Uniform Film With Minimal Edge Exclusion on Substrate	US	09/760757	17-Jan-2001	2002/0053516	09-May-2002	6610190	26-Aug-2003	Issued	ASMNT
NT.200	C1	Method and Apparatus for Electrodeposition of Uniform Film With Minimal Edge Exclusion on Substrate	US	10/460032	11-Jun-2003	2003/0209429	13-Nov-2003	6942780	13-Sep-2005	Issued	ASMNT
NT.200	C2	Method and Apparatus for Electrodeposition of Uniform Film With Minimal Edge Exclusion	US	11/225913	13-Sep-2005					Pending	ASMNT
NT.201	AUS	Method and Apparatus for Controlling Thickness Uniformity of Electroplated Layer	US	09/855059	15-May-2001	2002/0079230	27-Jun-2002	6802946	12-Oct-2004	Issued	ASMNT
NT.201	D	Method and Apparatus for Controlling Thickness Uniformity of Electroplated Layer	US	10/869850	18-Jun-2004	2004/0231994	25-Nov-2004			Published	ASMNT

Case Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.202 A1	Integrated System for Processing Semiconductor Wafers	US	09/795687	27-Feb-2001	2002/0088543	11-Jul-2002	6953392	11-Oct-2005	Issued	ASMNT
NT.202 C1	Integrated System for Processing Semiconductor Wafers	US	11/249917	11-Oct-2005					Abandoned.	ASMNT
NT.203 A	Carrier Head for Holding a Wafer and Allowing Processing on a Front Face Thereof to Occur	US	10/043656	08-Jan-2002	2002/0151257	17-Oct-2002	6716084	06-Apr-2004	Issued	ASMNT
NT.205 A1	Workpiece Surface Influencing Device Designs for Electrochemical Mechanical Processing	US	10/302755	21-Nov-2002	2003/0121774	03-Jul-2003			Published	ASMNT
NT.206 A1	Electroetching System and Method	US	09/841622	23-Apr-2001	2002/0153097	24-Oct-2002	6852630	08-Feb-2005	Issued	ASMNT
NT.206 D	Electroetching System and Method.	US	11/054053	08-Feb-2005	005/0145489-A	07-Jul-2005			Published	ASMNT
NT.209 A1	Mask Plate Design	US	09/960236	20-Sep-2001	2002/0121445	05-Sep-2002			Published	ASMNT
NT.210 A	Edge and Bevel Cleaning Process and System	US	10/051755	15-Jan-2002	2002/0155648	24-Oct-2002	6777338	17-Aug-2004	Issued	ASMNT
NT.210 C1	Edge and Bevel Cleaning Process and System	US	10/920026	16-Aug-2004	2005/0079713	14-Apr-2005	7122473	17-Oct-2006	Issued	ASMNT
NT.212 A1	Plating method and Apparatus that Creates a Differential between Additive Disposed on a Top Surface and a Cavity Surface ofa Workpiece using an indirect External Influence	US	09/919788	31-Jul-2001	2002/0020628	21-Feb-2002	6858121	22-Feb-2005	Issued	ASMNT
NT.213 A1	Method and Apparatus for Avoiding Particle Accumulation in Electrodeposition	US	09/982558	17-Oct-2001	2002/0139682	03-Oct-2002	6932896	23-Aug-2005	Issued	ASMNT
NT.213 D	Method and Apparatus for Avoiding Particle Accumulation in Electrodeposition	US	11/057297	10-Feb-2005	2005/0145484	07-Jul-2005			Published	ASMNT
NT.214 A	Electroetching Methods and Systems Using Chemical and Mechnical Influence	US	10/117991	05-Apr-2002	2003/0178319	25-Sep-2003	6821409	23-Nov-2004	Issued	ASMNT
NT.214 C1	Electroetching Methods and Systems Using Chemical and Mechnical Influence	US	10/996165	22-Nov-2004	2005/0133380	23-Jun-2005			Published	ASMNT
NT.215 CP1	Method and System to Provide Electrical Contacts for Electrotreating Processes	US	10/282930	28-Oct-2002	2003/0089615	15-May-2003			Published	ASMNT

PATENT

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.215	CP2	Method and System to Provide Electrical Contacts for Electrotreating Processes	US	10/282911	28-Oct-2002	2003/0089612	15-May-2003			Published	ASMNT
NT.215	CP3	Method and System to Provide Electrical Contacts for Electrotreating Processes	US	10/283025	28-Oct-2002	2003/0089598	15-May-2003			Published	ASMNT
NT.216	A1	Method of Sealing Wafer Backside For Full-Face Electrochemical Plating	US	09/910686	20-Jul-2001	2002/0127956	12-Sep-2002	6855037	15-Feb-2005	Issued	ASMNT
NT.216	C1	Method of Sealing Wafer Backside For Full-Face Electrochemical Plating	US	10/788926	25-Feb-2004	2004/0166789	26-Aug-2004	6988932	24-Jan-2006	Issued	ASMNT
NT.217	A	Polishing Apparatus and Method with Belt Drive System Adapted to Extend the Liefetime of a Refereshing Polishing Belt Provided Therein	US	09/880730	12-Jun-2001	2002/0009959	24-Jan-2002	6464571	15-Oct-2002	Issued	ASMNT
NT.217	C1	Polishing Apparatus and Method with Belt Drive System Adapted to Extend the Llifetime of a Refreshing Polishing Belt Provided Therein	US	10/252149	20-Sep-2002	2003/0022605	30-Jan-2003	6604988	12-Aug-2003	Issued	ASMNT
NT.217	C2	Polishing Apparatus and Method with Belt Drive System Adapted to Extend the Llifetime of a Refreshing Polishing Belt Provided Therein	US	10/295197	15-Nov-2002	2003/0096561	22-May-2003	6932679	23-Aug-2005	Issued	ASMNT
NT.220	A1	Multi-Step Electrodeposition Process	US	10/201604	22-Jul-2002	2003/0038038	27-Feb-2003	6946066	20-Sep-2005	Issued	ASMNT
NT.220	C1	Multi-Step Electrodeposition Process	US	11/232026	20-Sep-2005					Published	ASMNT
NT.224	A1	Fabrication of Semiconductor Interconnect Structures	US	10/264726	03-Oct-2002	2003/0032373	13-Feb-2003			Published	ASMNT
NT.225	A1	Plating Method and Apparatus for Controlling Deposition on Predetermined Portions of a Workpiece	US	09/961193	20-Sep-2001	2004/0124089	01-Jul-2004	6921551	26-Jul-2005	Issued	ASMNT
NT.225	D	Plating Method and Apparatus for Controlling Deposition on Predetermined Portions of a Workpiece	US	11/190763	26-Jul-2005	2005/0258046	24-Nov-2005			Published	ASMNT
NT.226	A	Low force Electrochemical Mechanical Deposition Method and Apparatus	US	10/155828	23-May-2002	2003/0064669	03-Apr-2003			Published	ASMNT

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.228	A1	Integrated System for Processing Semiconductor Wafers	US	10/369118	18-Feb-2003	2003/0166382	04-Sep-2003	7059944	13-Jun-2006	Issued	ASMNT
NT.228	C	Integrated System for Processing Semiconductor Wafers	US	11/452609	13-Jun-2006					Pending	ASMNT
NT.229	A	End Point Detection in Planar Metal Deposition System	US	10/017494	07-Dec-2001	2002/0134748	26-Sep-2002	6936154	30-Aug-2005	Issued	ASMNT
NT.233	A	Chemical Mechanical Polishing Endpoint Detection	US	09/976469	12-Oct-2001	2003/0073319	17-Apr-2003	6579800	17-Jun-2003	Issued	ASMNT
NT.234	A1	Electrochemical Mechnical Depositon with Advancible Sweeper	US	10/288558	04-Nov-2002	2003/0106807	12-Jun-2003	7097755	29-Aug-2006	Issued	ASMNT
NT.235	A	Method and System to Provide Electroplanarization of a Workpiece with Conducting Material Layer	US	10/032219	21-Dec-2001	2003/0139053	24-Jul-2003	6780772	24-Aug-2004	Issued	ASMNT
NT.236	A	Method and Structure for the Thru-Mask Contact Electrodeposition	US	10/282976	28-Oct-2002	2003/0080431	01-May-2003	6815354	09-Nov-2004	Issued	ASMNT
NT.238	A1	Endpoint Detection in Chemical Mechanical Polishing System	US	10/052475	17-Jan-2002	2002/0173225	21-Nov-2002	6908374	21-Jun-2005	Issued	ASMNT
NT.239	A	Electrochemical Edge and Bevel Cleaning Process and System	US	10/032318	21-Dec-2001	2003/0116444	26-Jun-2003	6833063	21-Dec-2004	Issued	ASMNT
NT.240	A	Method and Apparatus for Planar Matrial Removal Technique Using Multi Phase Process Environment	US	10/383466	06-Mar-2003	2003/0168351	11-Sep-2003	7101471	05-Sep-2009	Issued	ASMNT
NT.243	A1	Method and Apparatus of Monitoring and Controlling Force Applied on Workpiece Surface during Electrochemical Mechanical Processes	US	10/122646	12-Apr-2002	2003/0194866	16-Oct-2003	6967166	22-Nov-2005	Issued	ASMNT
NT.243	D	Method and Apparatus of Monitoring and Controlling Force Applied on Workpiece Surface during Electrochemical Mechanical Processes	US	11/280540	15-Nov-2005					Pending	ASMNT
NT.245	A	Metod of Optical Metal Planarization	US	10/637731	08-Aug-2003	2005/0029123	10-Feb-2005			Published	ASMNT
NT.246	A	Method and Structure to Reduce Defects in Integrated Circuits and Substrates	US	10/358565	04-Feb-2003	2003/0160326	28-Aug-2003	6861354	01-Mar-2005	Issued	ASMNT

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.247	A1	Method of Monitoring and Controlling Film Thickness Profile during Plating and Electroetching	US	10/427309	30-Apr-2003	2003/0230491	18-Dec-2003	6866763	15-Mar-2005	Issued	ASMNT
NT.248	A	Advanced Chemical Mechanical Polishing System with Smart Endpoint Detection	US	10/197090	15-Jul-2002	2003/0153245	14-Aug-2003	6722946	20-Apr-2004	Issued	ASMNT
NT.248	C1	Advanced CMP System with Smart Endpoint Detection	US	10/817784	02-Apr-2004	2006/0063469	23-Mar-2006	7097538	29-Aug-2006	Issued	ASMNT
NT.250	A	Chemical Mechanical Polishing Apparatus and Methods Using a Flexible Pad and Variable Fluid Flow For Variable Polishing	US	10/105016	22-Mar-2002	2003/0181143	25-Sep-2003	6926589	09-Aug-2005	Issued	ASMNT
NT.251	A	Pad Tensioning Method and System in a Bi-Directional Linear Polisher	US	10/126464	18-Apr-2002	2003/0022599	30-Jan-2003	6589105	08-Jul-2003	Issued	ASMNT
NT.251	C1	Pad Tensioning Method and System in a Bi-Directional Linear Polisher	US	10/614311	07-Jul-2003	2004/0097177	20-May-2004	6908368	21-Jun-2005	Issued	ASMNT
NT.252	A	Electrochemical Edge and Bevel Cleaning Process and System	US	10/327609	20-Dec-2002	2003/0141201	31-Jul-2003	7029567	18-Apr-2006	Issued	ASMNT
NT.253	A	Single Drive System for a Bi-Directional Linear Chemical Mechanical Polishing Apparatus	US	10/126469	18-Apr-2002	2003/0022607	30-Jan-2003	6634935	21-Oct-2003	Issued	ASMNT
NT.254	A	Planar Metal Electrodeposition	US	10/201606	22-Jul-2002	2003/0119311	26-Jun-2003	6867136	15-Mar-2005	Issued	ASMNT
NT.254	D	Method for Electrochemically Processing a Workpiece	US	10/996164	22-Nov-2004			7115510	03-Oct-2006	Issued	ASMNT
NT.254	DV1	Planar Metal Electrodeposition	US	10/995688	22-Nov-2004					Pending	ASMNT
NT.257	A	Distributed Control System for Semiconductor Manufacturing Equipment	US	10/199924	19-Jul-2002	2003/0155073	21-Aug-2003	6736929	18-May-2004	Issued	ASMNT
NT.257	C1	Distributed Control System For Semiconductor Manufacturing Equipment	US	10/697199	31-Oct-2003	2004/0089421	13-May-2004			Abandoned.	ASMNT
NT.260	C1	Constant Low Force ECMD Head	US	10/654542	02-Sep-2003	2004/0112760	17-Jun-2004			Published	ASMNT
NT.261	CP1	Method and Apparatus of Sealing Wafer Backside For Full Face Electrochemical Plating	US	10/159295	31-May-2002	2003/0008602	09-Jan-2003	6939206	06-Sep-2005	Issued	ASMNT

Case Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.272 A1	Special Workpiece Surface Influencing Device Design and Structure for Electrochemical Mechanical Processing	US	10/367111	14-Feb-2003	2003/0217927	27-Nov-2003			Published	ASMNT
NT.276 A1	Method of Electrical Contact to Wafer Frontal Side for Electrochemical Plating	US	10/265460	03-Oct-2002	2003/0029731	13-Feb-2003	6852208	08-Feb-2005	Issued	ASMNT
NT.276 C1	Method of Electrical Contact to Wafer Frontal Side for Electrochemical Plating	US	10/947628	21-Sep-2004	2005/0034994	17-Feb-2005			Published	ASMNT
NT.277 A1	Polishing System Employing Air Rollers	US	10/632481	01-Aug-2003	2004/0087259	06-May-2004	6939203	06-Sep-2005	Issued	ASMNT
NT.278 A1	Advanced Chemical Mechanical Polishing System With Smart Endpoint Detection	US	10/346425	17-Jan-2003	2004/0023606	05-Feb-2004	6857947	22-Feb-2005	Issued	ASMNT
NT.279 A1	Multi-Process Polishing of Conductive Layers	US	10/703293	07-Nov-2003	2004/0132381	08-Jul-2004			Published	ASMNT
NT.280 A	In-Situ Endpoint Detect for Non-Transparant Polishing Member	US	10/321150	17-Dec-2002	2003/0153246	14-Aug-2003	6942546	13-Sep-2005	Issued	ASMNT
NT.284 A1	Bleed and Feed System	US	10/698872	31-Oct-2003	2004/0142566	22-Jul-2004			Abandoned.	ASMNT
NT.285 A	Reverse Flow Electrode Assembly for Plating and Polishing	US	10/723045	26-Nov-2003	2005/0006244				Published	ASMNT
NT.288 A1	Defect Free Thin and Planar Film Deposition	US	10/379265	03-Mar-2003	2004/0012090	22-Jan-2004	6943112	13-Sep-2005	Issued	ASMNT
NT.288 DV1	Defect Free Thin and Planar Film Deposition	US	11/226511	13-Sep-2005					Pending	ASMNT
NT.290 A	Method of Electroplating Copper Layers with Flat Topography	US	10/769605	30-Jan-2004	2004/0265562	30-Dec-2004			Published	ASMNT
NT.291 A1	Electroetching System and Process	US	10/391924	18-Mar-2003	2004/0007478	15-Jan-2004			Published	ASMNT
NT.292 A	Process for Eliminating Air Bubbles During Electroplating	US	10/692953	24-Oct-2003	2004/0182715	23-Sep-2004			Pending	ASMNT
NT.294 A1	Method and Apparatus for Reduction of Defects in Wet Processed Layers	US	10/425782	29-Apr-2003	2004/0198190	07-Oct-2004			Published	ASMNT
NT.295 A	Means to Improve Center to Edge Uniformity of Electrochemical Mechanical Processing of Workpiece Surface	US	10/816340	31-Mar-2004	2004/0266193	30-Dec-2004			Published	ASMNT

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.296	A	System for Electropolishing and Electrochemical Mechanical Polishing	US	10/822424	12-Apr-2004	2005/0133379	23-Jun-2005			Published	ASMNT
NT.297	A	Eliminating Defects during Electropolishing Process	US	10/638751	11-Aug-2003	2004/0200732	14-Oct-2004			Published	ASMNT
NT.298	A	Reduction of Defects in Conductive Layers during Electroplating	US	10/637243	07-Aug-2003	2005/0029106	10-Feb-2005			Published	ASMNT
NT.299	A	Method and Structure to Improve Reliability of Copper Interconnects	US	10/858766	01-Jun-2004	2004/0219779	04-Nov-2004	7129165	31-Oct-2006	Issued	ASMNT
NT.301	AUS	Apparatus and Method for Applying Constant Pressure during Electroplating and Electropolishing	US	10/984272	08-Nov-2004	2005/0101138	12-May-2005			Abandoned.	ASMNT
NT.303	A	Adjustable Gap Chemical Mechanical Polishing Method and Apparatus	US	10/886105	06-Jul-2004	2005/0118932	02-Jun-2005			Abandoned.	ASMNT
NT.305	A	Method and System for Controlled Material Removal by Electrochemical Polishing	US	10/902241	29-Jul-2004					Pending	ASMNT
NT.306	A	Method and Apparatus for Local Metal Removal by Electrochemical Polishing	US	10/719909	21-Nov-2003	2005/0112868	26-May-2005	7064037	20-Jun-2006	Issued	ASMNT
NT.307	AUS	Method and System for Material Removal and Planarization	US	11/011529	19-Nov-2004					Published	ASMNT
NT.308	A	Methods for Depositing High Yiel and Low Defect Density Conductive Films in Damascene Structures	US	10/698878	31-Oct-2003	2005/0095854	05-May-2005			Published	ASMNT
NT.309	A	Edge and Bevel Cleaning Process and System	US	10/676895	30-Sep-2003	2004/0140287	22-Jul-2004			Published	ASMNT
NT.310	A	Process and System for Eliminating Gas Bubbles during Electrochemical System	US	10/692952	24-Oct-2003	2004/0182712	23-Sep-2004	7045040	16-May-2006	Issued	ASMNT
NT.310	DV	Process and System for Eliminating Gas Bubbles during Electrochemical processing	US	11/436206	16-May-2006					Pending	ASMNT
NT.312	AUS	System and Method for Electroless Surface Conditioning	US	10/976534	28-Oct-2004	2005/0170080	04-Aug-2005			Published	ASMNT

Case	Extension	Title		ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.313	A	Electrochemical Mechanical Deposition Process using Low Temperature Process Environment	US	10/705360	10-Nov-2003	2004/0170753	02-Sep-2004			Published	ASMNT
NT.314	AUS	System for Fault-Tolerant-Fluid Level Sensing and Switching	US	10/876859	24-Jun-2004					Pending	ASMNT
NT.315	A	System and Method for Seed Layer Removal	US	10/782697	18-Feb-2004					Published	ASMNT
NT.316	A	Chemical Mechanical Polishing Method and Apparatus for Controlling Material Remval Profile	US	10/761877	21-Jan-2004	2005/0159084	21-Feb-2005			Abandoned.	ASMNT
NT.317	A1	Method and Apparatus to Deposit Layers with Uniform Properties	US	10/744294	22-Dec-2003	2004/0168926	02-Sep-2004			Published	ASMNT
NT.318	A	Systm for Electrochemial Mechanical Polishing	US	11/069202	28-Feb-2005	2005/0173260	11-Aug-2005			Published	ASMNT
NT.319	A	Process and System for Providing Electrochemical Processing Solution with Reduced Oxygen Gas Content	US	10/772687	05-Feb-2004	2004/0222100	11-Nov-2004			Published	ASMNT
NT.320	A	Method of Reducing Post-CMP Defectivity	US	10/818976	06-Apr-2004	2004/0259348	23-Dec-2004			Published	ASMNT
NT.321	CP	Electrochemical Mechanical Processing with Advancible Sweeper	US	2005/001404	22-Apr-2004	2005/10536	10-Nov-2005			Published	ASMNT
NT.321	US	Electrochemical Mechanical Processing with Advancible Sweeper	US	10/830894	23-Apr-2004					Pending	ASMNT
NT.324	US	System and Method for Electrochemical Mechanical Polishing	US	11/173233	01-Jul-2005	2006/0006073	12-Jan-2006			Published	ASMNT
NT.330	US	Method and structure for reducing gap fill defects	US	11/238886	27-Sep-2005					Pending	ASMNT
NT.331	US	Means to eliminate bubble entrapment during electrochemical processing of workpiece surface	US	11/283004	18-Nov-2005					Published	ASMNT
NT.332	A	Method and system for electroprocessing conductive layers	US	11/088324	23-Mar-2005					Published	ASMNT

Case	Extension	Title	ApplicationNo	FilingDate	PublicationNo	Publication Date	PatentNo	Issue Date	Status	Assgnee
NT.333	AUS	Conductive Materials for low Resistance Interconnects and Methods of Forming the Same	US 11/351914	09-Feb-2006					Pending	ASMNT
NT.335	A	Method and system for electroprocessing conductive layers	US 11/185591	19-Jul-2005					Pending	ASMNT
NT.336	US	Method and apparatus for subhstrate rinsing	US 11/218385	02-Sep-2005					Pending	ASMNT
NT.337	US	Efficient Wafer Processing Technology	US 11/4477368	05-Jun-2006					Pending	ASMNT
NT.339	US	Method of forming contact layers on substrates	US 11/232718	21-Sep-2005					Pending	ASMNT
NT.340	US	Plating apparatus and method for controlling conductor depostion on predetermined portions of a wafer	US 11/221060	06-Sep-2005					Pending	ASMNT
NT.341	US	Method of depositing materials on full face of a wafer	US 11/313249	19-Dec-2005					Pending	ASMNT
NT.342	US	Method and apparatus for establishing additive differential on surfaces for preferential plating	US 11/237991	26-Sep-2005					Pending	ASMNT
NT.343	US	Process for conditioning conductive surfaces after electropolishing	US 11/283112	17-Nov-2005					Pending	ASMNT
NT.344	A	Electrode and Pad Assembly for Processing Conductive Layers	US 11/347669	03-Feb-2006					Pending	ASMNT

PATENT