

ISAAT2005 (International Symposium on Advances in Abrasive Technology, 2005) (Provisional)

20, June (Monday)		21, June (Tuesday)	
		Room A	Room B
9:00	9:00	Plenary Session St. Petersburg Government St. Petersburg State Polytechnic University	
9:10	9:10		
9:20	9:20		
9:30	9:30		
9:40	9:40		
9:50	9:50		
10:00	10:00		
10:10	10:10		
10:20	10:20		
10:30	10:30		
10:40	10:40	Coffee Break	
10:50	10:50		
11:00	11:00	I. Advanced Grinding Technologies (1) Development of New Device for Form-Grinding and Research on the Profile-Accuracy Q.S. Yan, L.Y. Kong, N.Q. Wu, S.B. Chen, Z.Q. Zhang and Z.D. Zheng	VIII. Cutting Performance and its Mechanism MQL Cutting of Inconel 718 with a Super Lattice Coating Tool T. Obikawa and Y. Kamata
11:10	11:10		
11:20	11:20	Adaptive Table-Motion Control of a Surface Grinding Machine Using an AE Sensor A. Yui, S. Okuyama and T. Kitajima	High-Speed Milling Experiments on the Extended Length of Milling Tool Z. Qin, C.Y. Wang, Y.N. Hu and Y.S. Lin
11:30	11:30		
11:40	11:40	An Adaptive Control of Machine Table Reciprocation Using a Hydrophone - A Method for Improving the System Efficiency and Reliability - S. Okuyama, M. Hayashi, A. Yui and T. Kitajima	Drilling Assisted by Ultrasonic Elliptical Vibration C.X. Ma, E. Shamoto and T. Moriwaki
11:50	11:50		
12:00	12:00	Abrasive Technology of Single-Crystal Diamond by Diamond Abrasive Wheel Y. Ma and Z.F. Lou	Study on Ultrasonic Vibration Drilling of Particulate Reinforced Aluminium Matrix Composites C.S. Liu, B. Zhao, G.F. Gao and X.H. Zhang
12:10	12:10		
12:20	12:20	Effects of TiH ₂ on the Properties of Fe-Based Diamond Composites Q.L. Dai and X.P. Xu	Enhancing the AWJ Cutting Performance by Multipass Machining with Controlled Nozzle Oscillation J. Wang and S. Xu
12:30	12:30		
12:40	12:40	Effect of Ultrasonic Elliptical Vibration on Friction between Shoe and Workpiece in Ultrasonic Elliptical-Vibration Shoe Centerless Grinding Y. Wu, Y. Fan, T. Tachibana and M. Kato	Mathematical Models for the Hydrodynamic Characteristics of Abrasive Waterjets J. Wang and H. Liu
12:50	12:50		
13:00	13:00	Eco- and Energy-Efficient Grinding Processes B. Denkena, M. Reichstein, N. Kramer, J. Jacobsen and M. Jung	Prevention from Delamination of Composite Material during Drilling Using Ultrasonic Vibration S. Aoki, S. Hirai and T. Nishimura
13:10	13:10		
13:20	13:20	Study on Ultrasonic Vibration Grinding Character of Nano ZrO ₂ Ceramics B. Zhao, X.H. Zhang, C.S. Liu, F. Jiao and X.S. Zhu	Influence of Material of Small Radius Ball End Mill on Cutting Accuracy in Deep Precision Machining T. Akamatsu, K. Kitajima, S. Minamino and T. Kiriya
13:30	13:30		
13:40	13:40	New Compensation Grinding of Axisymmetrical Aspherical Lenses with High NA Value N. Yoshihara and T. Kuriyagawa	Study on Surface Integrity of PTFE Finished by Ultra-Precision Cutting and Surface Performance K. Okuda and M. Nunobiki
13:50	13:50		

20, June (Monday)		21, June (Tuesday)	
		Room A	Room B
14:00		14:00	
14:10		14:10	
14:20		14:20	
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14:40		14:40	
14:50		14:50	
		Lunch	
15:00	Early Registration	15:00	I. Advanced Grinding Technologies (2) A New Diamond Wheel Containing Boron Doped Diamond Abrasives Enabling Electrically Conductive Cutting Edge and High Thermal Stability K. Suzuki, M. Iwai, S. Ninomiya, K. Takeuchi, K. Tanaka, Y. Tanaka and T.
15:10		15:10	IX. Advanced Machine Tools, Cutting, and Abrasive Tools Comparative Study on Machining the Internal Stationary Toroidal Gear L. Yao, G.W. Wei, Z.H. Lan and J.S. Dai
15:20		15:20	Attempt of Electrodischarge Grinding with an Electrically Conductive Diamond-Cutting-Edge Wheel K. Suzuki, S. Ninomiya, M. Iwai, Y. Tanaka, Y. Murakami, S. Sano, K. Tanaka and T. Uematsu
15:30		15:30	Studies on NC Machining for Cylindrical Cams W.Q. Gao, Q.S. Yan, J. Liang and Z.Y. Liu
15:40		15:40	Ultra-High Speed Grinding Using a CBN Wheel for a Mirror-Like Surface Finish M. Ota, T. Nakayama, K. Takashima and H. Watanabe
15:50		15:50	Dynamic Analysis of a Biglide Parallel Grinder P. Zou
16:00		16:00	Ultraprecision Fabrication of Large-Scale SiC Spherical Mirror Using ELID Grinding Process Y. Dai, H. Ohmori, W. Lin, H. Eto and N. Ebizuka
16:10		16:10	A New Architecture of Tool Path Generation for Five-Axis Control Machining K. Nakamoto, K. Shirase, A. Morishita, E. Arai and T. Moriwaki
16:20		16:20	XII. Inspection and Manufacturing Technologies Development of Orthogonal Impact Cutting Testing Machine J. Shinozuka and T. Obikawa
16:30		16:30	Fault Monitoring and Diagnosis of Ball Bearing Based on Hilbert-Huang Transformation H. Li, H.Q. Zheng and L.W. Tang
16:40		16:40	Hilbert-Huang Transform and Its Application in Gear Faults Diagnosis H. Li, H.Q. Zheng and L.W. Tang
16:50		16:50	Research of the Technological Parameters Influencing on the Surface Quality of Micro Complex Surface M.J. Chen, Y.C. Liang, Y.Z. Sun, W.X. Guo and W.J. Zong
17:00		17:00	An Optimal Matching Algorithm Based on Rough Localization and Exact Adjustment Y.W. Sun and J.T. Xu
17:10		17:10	The Effect of Secondary Piezoelectric Effect on the Measuring Precision of Quartz Dynamometers L.P. Shi, B.Y. Sun and M. Qian
17:20	17:20	Study on Key Technologies of DNC System Oriented Networked Manufacturing M.J. Wang, Y.J. Cai and W.G. Yan	
17:30	17:30	Development of Shrinking Tool Holder Utilizing of Shape Memory Alloy K. Kitajima, H. Sogabe and M. Hiromi	
17:40	17:40	Wavelet Transform Based 3D Scattered Data Processing in Binocular Micro Stereovision System C. Liu, W. Pei, Z.Y. Xia, S. Niyokindi, J.C. Song and L.D. Wang	
17:50	17:50	Microstructure of Ni-Al-Diamond Composite Fabricated by Self-Propagating High Temperature Synthesis F.L. Zhang, H. Yuan, C.Y. Wang, K.X. Fu and Y.M. Zhou	
18:00		18:00	
18:10		18:10	
18:20		18:20	
18:30		18:30	
		Welcome Party	

22, June (Wednesday)		
	Room A	Room B
9:00	V. Deburring and Finishing (1) Analysis of Burr Formation Mechanism in Turning Aluminium Alloy Al6061-T6 A. Toropov, S.-L. Ko and B.-K. Kim	X. EDM, ECM and USM (1) Electroforming of Copper/ZrB ₂ Composite Coatings and Its Performance as Electro-Discharge Machining Electrodes Z.J. Jin, M. Zhang, D.M. Guo and R.K. Kang
9:10		Performance of an Electrically Conductive CVD Diamond Electrode for EDM and FEM Analysis for a Very Low Wear K. Suzuki, M. Iwai, A. Sharma, S. Ninomiya, T. Uematsu and S. Sano
9:20		A New Application of PCD as a Very Low Wear Electrode Material for EDM K. Suzuki, A. Sharma, S. Sano, M. Iwai and T. Uematsu
9:30	Effective Deburring of Micro Burr Using Magnetic Abrasive Finishing Method J.I. Park, S.-L. Ko, Y.H. Hanh and Y.M. Baron	A Study of Surface Integrity in WEDM-HS with Air Medium Z.N. Guo, J.W. Liu and F.Z. Zeng
9:40		Calculating the Overcut in Electro-Discharge Machining F.L. Zhao, H. Wang and Z.Z. Lu
9:50	Improvement of Surface Texture of Stainless Steel by Utilizing Dry Blasting - 2nd Report: Effect of Blasting Conditions on Wettability - K. Minaki, K. Kitajima, K. Minaki, M. Izawa and K. Tosha	
10:00		
10:10	Abrasive Characteristics on Mirror Finishing by Alumina Fiber Brush K. Ishikawa, H. Suwabe and Y. Tutae	
10:20		
10:30		
10:40	Coffee Break	
10:50		
11:00	V. Deburring and Finishing (2) Electrochemical Magnetic Abrasive Compound Finishing J.C. Fang, W.J. Xu, Z.Y. Zhao and H.Y. Li	II. Grinding Performance and its Mechanism (1) Studies on CCD On-Line Measurement System for Grinding Wheel Wear Y.H. Zhang, H.Q. Tang and D.J. Hu
11:10		Wear of Metal-Bonded Diamond Tools in Different Abrasive Processes X.P. Xu, Q.L. Han and Y. Li
11:20	Study on Internal Magnetic Field Assisted Finishing Process Using a Magnetic Machining Jig Y. Zou and T. Shinmura	Signal Analysis of Acoustic Emission for Laser Imitating Grinding Burn X. Chen, Q. Liu and N. Gindy
11:30		Analysis of Grinding Temperature Considering Surface Generation Mechanism T. Obikawa and J. Shinozuka
11:40	Development of Gas-Atomized Magnetic Tools T. Saito, K. Koike, H. Yamato, A. Kuwana, A. Suzuki, H. Yamaguchi and T. Shinmura	Noise and Vibration of Diamond Sawblade for Concrete Dry Cutting C.Y. Wang, Y.N. Hu, Z.W. Wang and H.N. Ding
11:50		Force Characteristics in Ultrasonic Vibration Grinding of Nanoceramics Y. Wu, B. Zhao and X.S. Zhu
12:00	Characterization of the Magnetic Abrasive Finishing Method and Its Application to Deburring Y.M. Baron, S.-L. Ko and J.I. Park	
12:10		
12:20	Technique of Comparison and Optimization of Conditions for Magnetic Abrasive Finishing Y.M. Baron, S.-L. Ko and J.I. Park	
12:30		
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13:00	Lunch	
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22, June (Wednesday)		
Room A	Room B	
14:00 14:10 14:20	<p>V. Deburring and Finishing (3) Finishing of Shape Surfaces by Magnetic Abrasive Polishing Method with Rotating Working Area V.A. Litvinenko</p>	<p>II. Grinding Performance and its Mechanism (2) Experimental Research on ELID Grinding and Cutting Performance of Nano Cemented Carbide Cutters F.H. Zhang, J.C. Gui, Y.Z. Liu and H.L. Zhang</p> <p>ELID Grinding Properties of High-Strength Reaction-Sintered SiC Y. Dai, H. Ohmori, W. Lin, H. Eto, N. Ebizuka and K. Tsuno</p>
14:30 14:40 14:50	<p>Mechanics of the Micro Cutting by Abrasive Particle at Vibro-Abrasive Processing A.P. Babichev</p>	<p>Characterization of ELID-Ground Granite Surfaces J.Y. Shen, W. Lin, H. Ohmori and X.P. Xu</p>
15:00 15:10 15:20	<p>Quality of Deburring and Surface Finishing (DSF) in Russia A.P. Babichev</p>	<p>Surface Quality Improvement of Aspherical Pressing Mould Using Parallel Grinding Method F.H. Zhang, L.J. Li and S. Dong</p> <p>Effect of Cutting Edge Truncation on Ground Surface Morphology of Hard and Brittle Materials for Optical Devices X. Kang, J. Tamaki, A. Kubo, J. Yan and T. Iyama</p>
15:30		
15:40 15:50	Coffee Break	
16:00 16:10 16:20	<p>V. Deburring and Finishing (4) The Optimization of Technological Processes of Detail Processing by Free Abrasives M.A. Tamarkin</p>	<p>II. Grinding Performance and its Mechanism (3) Experimental Research on ELID Grinding and Cutting Performance of Nano Cemented Carbide Cutters F.H. Zhang, J.C. Gui, Y.Z. Liu and H.L. Zhang</p> <p>Reliability Prediction of Centerless Grinding Machine S.W. Lee, H.-Z. Choi, S.H. Nam and Y.J. Choi</p>
16:30		
16:40 16:50	<p>X. EDM, ECM and USM (2) Research on Highly Efficient EDM Pulse Power Supply and Its Experiments Y.K. Wang, B.Y. Song and W.S. Zhao</p>	<p>A Comprehensive Evaluation Model for Assessments of Grinding Machining Quality H.-Z. Huang, Y.-H. Li and L.-H. Xue</p>
17:00 17:10	<p>The Research of Carbon Steel Surface Finished by Pulse Electrochemical Finishing Technology H. Wang, J.J. Zhou and W.J. Xu</p>	<p>Analysis of the Grinding Mechanism with Wheel Head Oscillating Type CNC Crankshaft Pin Grinder T. Fujiwara, S. Tsukamoto and M. Miyagawa</p>
17:20 17:30	<p>Study on the Machined Surface Topography and Performances on Electrochemical Finishing H.Y. Li, X.M. Liu, H.J. Liu and J.C. Fang</p>	<p>XI. Forming and the Related Novel Technologies (1) Graph-Analytic Modification of the Method of Upper Estimation (Method of Energetic Geometry) A.A. Alexandrov and V.V. Evstifeev</p>
17:40 17:50	<p>Effect of Tool Segmentation in Ultrasonic Machining - Studies of Ultrasonic Die Sinking - O. Saito and T. Kuriyagawa</p>	<p>Features of Application of the Laser Method for Normalization of Accuracy of Resistors in Hybrid Integrated Circuits Y. Antonov</p>
18:00 18:10 18:20		
18:30	Evening Excursion of St. Petersburg	

23, June (Thursday)		24, June (Friday)	
Room A		Room B	
9:00	III. Dressing and Truing of Grinding Wheels (1) Investigation on the Dressing Shape of Vacuum Chuck in Wafer Rotation Grinding H. Gao, Y.B. Tian, Z.Y. Jia and R.K. Kang	VI. Lapping and Polishing (1) Lapping Machining of High-Speed and High-Precision Ceramic Bearing Balls Y.H. Wu, S.H. Li and K. Zhang	9:00
9:10			9:10
9:20	Energy-Mode Adjustment in Laser Processing a Small Vitrified CBN Grinding Wheel X.Y. Wang, Y.B. Wu, R.K. Kang, J. Wang, W.J. Xu and M. Kato	Time Series Analysis for the Mechanical Lapping of Single Crystal Diamond Cutting Tools W.J. Zong, D. Li, H.X. Wang, T. Sun, K. Cheng and M.J. Chen	9:20
9:30			9:30
9:40	Effects of Ultrasonic Vibration in Truing and Dressing of CBN Grinding Wheel Used for Internal Grinding of Small Holes M. Nomura, Y. Wu, M. Kato and T. Kuriyagawa	Effects of Particles Blend Ratio on Surface Quality in Surface Polishing Using Magnetic Polishing Liquid (MPL) Y. Wu, K. Shimada, Y.C. Wong and M. Kato	9:40
9:50			9:50
10:00	A Study on the Optimum Condition Selection of Rotary Dressing System of Ultra-Precision Centerless Grinding Machine for Ferrule E.-S. Lee, Y.-J. Chun and N.-K. Kim	Fundamental Verification of Ultraviolet-Excited Abrasion and Polishing Characteristics of Copper - Study of Luminescence Machining - Y. Chiwaya and T. Tanaka	10:00
10:10			10:10
10:20	Dressing Monitoring by Acoustic Emission B. Denkena, J. Jacobsen and N. Kramer	Ultra-Precision Finishing of Micro Aspherical Surface by Ultrasonic Vibration Assisted Polishing H. Suzuki, R. Kawamori, M. Miyabara, T. Okino, Y. Hijikata, Y. Yamamoto, K. Nakamoto, T. Moriwaki and H. Shibutani	10:20
10:30			10:30
10:40	Coffee Break		10:40
10:50			10:50
11:00	III. Dressing and Truing of Grinding Wheels (2) Dressing of Vitreous Bonded Wheels for Continuous Generating Grinding of Gears B. Denkena, M. Reichstein and F. Catoni	VI. Lapping and Polishing (2) Characteristics of High Rotational Speed Polishing with Oscillation Speed Control K. Yoshitomi, A. Une and M. Mochida	11:00
11:10			11:10
11:20	Development on Micro Precision Truing Method of ELID-Grinding Wheel (1st Report: Principle & Fundamental Experiments) H. Ohmori, S. Yin, W. Lin, Y. Uehara, S. Morita, M. Asami and M. Ohmori	Improvement of Machined Surface Flatness in Ultra-Precision Plane Honing S. Suzuki, N. Yoshihara and T. Kuriyagawa	11:20
11:30			11:30
11:40	Development on Micro Precision Truing Method of ELID-Grinding Wheel (2nd Report: Application to Edge Sharpening of Large Wheel) S. Yin, W. Lin, Y. Uehara, S. Morita, H. Ohmori, M. Asami and M. Ohmori	Polishing Characteristics of ELID-Ground Surface of Nano Precision Optical Elements W. Lin, H. Ohmori, T. Suzuki, Y. Uehara and S. Morita	11:40
11:50			11:50
12:00	IV. Coolant and Cooling in Grinding (1) Study on Lubricating and Cooling Effects of Several Cooling Systems Used in Face Grinding T. Tanaka and T. Kobayashi	Precision Abrasive Jet Finishing of Cemented Carbide T. Saito, S. Ito, Y. Mizukami and O. Horiuchi	12:00
12:10			12:10
12:20	A New Coolant Supply Method Using a Coolant Flow Guided Flexible Sheet Attracted to a Wheel Surface K. Suzuki, S. Ninomiya, M. Iwai, Y. Shishido and T. Uematsu	VII. Wafer Processing and Nano Processing (1) Measurement of Surface Roughness and Thickness of Silicon Wafers Using an Infrared Laser S. Koshimizu	12:20
12:30			12:30
12:40	Effects of Actively Cooled Coolant for Grinding Brittle Materials Y. Gao, H. Lai and S. Tse	Investigation of Chemical Mechanical Polishing of GaAs Wafer by the Effect of a Photocatalyst S.H. Hong, H. Isii, M. Touge and J. Watanabe	12:40
12:50			12:50
13:00	Lunch		13:00
13:10			13:10
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Meeting of Organizing Committee
Meeting of ICAT

Excursion to Petersgoff
(Optional tour)

23, June (Thursday)		24, June (Friday)
Room A	Room B	
14:00 IV. Coolant and Cooling in Grinding (2) Soap Mist Jet Cooling of Grinding Processes	VII. Wafer Processing and Nano Processing (2) Machining Mechanisms of Si Wafers in Mechanochemical Polishing by Soft Abrasives	14:00
14:10 D.M. Babic, A.A. Torrance and D.B. Murray	N. Yasunaga	14:10
14:20 Trends in Fluid Application Strategy for Grinding Processes	Friction Characteristic of Wafer Surface in Chemical Mechanical Polishing	14:20
14:30 D.J. Stephenson	Z.Y. Jia, J.X. Su, Z.J. Jin, D.M. Guo and L.P. Li	14:30
14:40 XI. Forming and the Related Novel Technologies (2) Study of Rapid Casting Process Based on SLS Prototypes	Corrosion Inhibiting Effect on Copper Chemical Mechanical Planarization (CMP) in Fe(NO ₃) ₃ Based Slurries	14:40
14:50 H.J. Liu, Y.M. Li, Y. Hao, X.P. Dong and N.Y. Huang	D.M. Guo, X.J. Li, Z.J. Jin and R.K. Kang	14:50
15:00 Study on the Dimensional Precision of the Polymer SLS Prototype	Nano Mechanical Processing of Silicon by Atomic Force Microscopy	15:00
15:10 H.J. Liu, Y.M. Li, Y. Hao, N.Y. Huang and Y.S. Shi	S. Miyake, M. Wang and J. Kim	15:10
15:20 Arc Spray Forming of Stainless Steel Mould	Application of Nanometer-Scale Processing Technique in High-Density Recording	15:20
15:30 Z.Y. Zhao, J.C. Fang, H. Wang and H.Y. Li	M. Wang and S. Miyake	15:30
15:40		15:40
15:50 Coffee Break		15:50
16:00 XI. Forming and the Related Novel Technologies (3) FGM Mould with Fine Veins Rapidly Manufactured by Plasma Spraying	VII. Wafer Processing and Nano Processing (3) Optimization of the Chemical Vapor Deposition Induced Focused Ion Beam	16:00
16:10 J.C. Fang, W.J. Xu, Z.Y. Zhao and L. Wang	H.-Z. Choi, E.-G. Kang, S.-W. Lee and W.-P. Hong	16:10
16:20 Application of Neural Network in Plasma-Arc Flexible Forming	Thinning Technology of Patterned Silicon Wafer for Micro Pressure Sensor	16:20
16:30 W.J. Xu, J.C. Fang, F. Liu, X.Y. Wang and Z.Y. Zhao	T. Nagano, M. Touge and J. Watanabe	16:30
16:40 Numerical Simulation of the Cooling Process of Extruded Plastic Profiles within Vacuum Calibrators	Study on the Surface and Subsurface Integrity of Ground Monocrystalline Silicon Wafers	16:40
16:50 D.Y. Zhao, M.J. Wang and M.C. Song	R.K. Kang, Y.X. Zhang, D.M. Guo and Z.J. Jin	16:50
17:00 A Novel Automatic Feed-Rate Adjustment Method for Die-Cavity Roughing		17:00
17:10 M.J. Wang, Y.J. Cai and W.G. Yan		17:10
17:20 Deformation Analysis of Fixturing for Workpiece with Complex Geometry		17:20
17:30 Y. Wang, X. Chen and N. Gindy		17:30
17:40		17:40
17:50		17:50
18:00		18:00
18:10		
18:20 Banquet		
18:30		

Excursion to Petersgoff
(Optional tour)