第 13 回 STM/STS 技術および関連技術国際会議 (STM'05)
第 13 回 SPM 国際コロキウム (ICSPM13)　合同国際会議報告

STM'05/ICSPM13 合同国際会議組織委員長
北海道大学電子科学研究所、附属ナノテクノロジー研究センター教授
徳本洋志

1. 開催日時、場所

2005 年 (平成 17 年) 7 月 3～8 日の 6 日間、札幌コンベンションセンター (http://www.sora-scc.jp/english/index.html、札幌市白石区東札幌 6 条 1 丁目) において、第 13 回STM/STS技術および関連技術国際会議 (The 13th International Conference on Scanning Tunneling Microscopy/Spectroscopy and Related Techniques: STM'05) と第 13 回SPM国際コロキウム (The 13th International Colloquium on Scanning Probe Microscopy: ICSPM13) の合同国際会議 (応用物理学会薄膜・表面物理分科会主催；徳本洋志北海道大学教授委員長) を開催した (図1)。

図1. 札幌コンベンションセンター前の STM'05/ICSPM13 国際会議の看板

2. 開催の経緯

STM 国際会議は 1986 年に第 1 回目をスペインで開催してから、アメリカ、ヨーロッパ、アジアの順番で 2 年毎 (当初は毎年) に開催されている。日本での開催は、1989 年に茨城県大洗町にて第 4 回 STM 国際会議 (STM'89、応用物理学会主催、委員長兵藤申一明大教授 (当時)) が開催されてから2回目となる。今回の札幌での開催は、平成 15 年 7 月下旬にオランダ・アイントホーヘン市で開催された STM'03 会議の際に国際組織委員会で議論され、決まったものである。これまでに開催された STM 国際会議への日本からの論文発表件数ならびに参加者数は開催国に次いで多いこと、ナノサイエンス・ナノテクノロジーの中心的手段である STM や AFM にアジアを含む世界の注目が集まっ

ていること、日本での開催が国際組織委員会で強く要請されていたこと、などを背景に国際組織委員の一人である北海道大学電子科学研究所徳本洋志教授が提案し了承されたものである。この 2 回の開催により、これまではどちらかといえば世界にリードしてもらっていた研究形態から、SPM 技術社会を日本もリードする立場になったといえる。

一方、ICSPM 国際会議は応用物理学会の薄膜･表面物理分科会主催特別研究会「走査型プローブ型顕微鏡」が 1985 年に日本国内の SPM 研究者を一堂に会し成果を発表しあう国内会議として第一回が開催されてから、毎年開催している。1993 年からは講演者（特に、招待講演者）を海外研究者まで広め、国際コロキウムとして開催している。この度、上記 STM 国際会議の開催に当り、薄膜･表面物理分科主催 SPM 特別研究会の組織委員会に諮ったところ、両会議の内容の重なりの多いため参加者の便宜を図り、合同で開催することした。

3．組織委員会構成

3．1　合同会議組織委員会構成

本会議は、STM'05 と ICSPM13 の合同国際会議であるため、組織委員会は応用物理学会の薄膜･表面物理分科会のメンバーを中心に構成した。（委員長等のみ掲載）

委員長：	徳本洋志（北海道大学、募金補佐）
副委員長：	魚住清彦（青山学院大学、薄膜･表面物理分科会幹事）
	市川昌和（東京大学、薄膜･表面物理分科会幹事長）
	尾浦憲治郎（大阪大学、応用物理学会理事）
監事：	大岩　烈（アルバック･ファイ、プログラム、会計、展示担当）
監査：	曽根逸人（群馬大学、会計監査）
委員：	重川秀実（筑波大学、プログラム委員長）
	吉村雅満（豊田工業大学、会計委員長、募金委員長）
	荻野俊郎（横浜国立大学，会計補佐）
	石橋幸治（理化学研究所、プログラム補佐、会計補佐）
	菅原康弘（大阪大学、出版委員長）
	山田啓文（京都大学、募金補佐）
	富取正彦（北陸先端科学技術大学、展示委員長）
	鈴木峰晴（アルバック･ファイ、展示補佐）
	末岡和久（北海道大学、会場委員長）
	岡嶋孝治（北海道大学、事務局長）

3．2　国際組織委員会構成

国際組織委員会メンバーは、これまでの STM 国際会議のメンバーに加え 3 名にお願いした。

Phaedon Avouris (IBM), Chunli Bai (Chinese Academy of Sciences), Dawn Bonnell (PENN), Rich Colton (NRL), Harold Craighead (Cornell University), Christoph Gerber (Basel Univ.), Paul Koenraad (TU/e), Young Kuk (Seoul National University), Jim Murday (NRL), Osamu Nishikawa (Kanazawa Inst. of Tech), Richard Palmer (Univ. of Birmingham), Lars Samuelson (Lund University), Michelle Simmons (Univ. of New South Wales), Hiroshi Tokumoto (Hokkaido University), Roland Wiesendanger （Univ.of Hamburg）, Bob Wolkow (NRC), Masakazu Aono (NIMS) , Seizo Morita (Osaka University), Hiroshi Yokoyama (AIST)

3．3　会議の準備委員会

北海道大学電子科学研究所徳本洋志教授は、応用物理学会の薄膜･表面物理分科会の複数のメンバーと打ち合わせながら、財団法人札幌国際プラザの札幌市コンベンション誘致促進補助金の交付の約束を取り付け、札幌コンベンションセンターを仮予約した後、国際組織委員会に提案し承認された。これらの経緯を踏まえ、徳本洋志教授を中心に予備的会合を複数回開催し会議の骨子を検討し、さらに応用物理学会講演会に合せて本合同国際会議の準備会（組織委員会）を 6 回開催し、会議の構成･運営など詳細を固めた。その中で、北海道大学電子科学研究所徳本洋志教授が組織委員長を務めること、組織委員長クラスメンバー、各委員会の委員メンバーなどを選出した。会議開催の第一歩の作業として、この合同国際会議のロゴマーク、First Circular、ポスターの作成作業を行った。北海道らしさと SPM 研究のトピックスを併せ持つことを念頭に検討し、図2の中央部に示したように決定した。ロゴマークの意味するところは、北海道の広い台地の上に 7 月にはカラフルな草花が咲きそろう様子、その草花と形状のマッチングを通じて相手方（SPM 探針）が相互作用する様子（STM とバイオ分野の融合）を示している。さらにこれらの考え方に基づき、札幌市内の観光名所（クラーク博士）、エックスカーションで訪問する町、などをアレンジしポスター（図2）や First Circular を作成した。世界中の関連研究者および関連会議で掲示･配布するとともに、会議の Website（http://dora.ims.tsukuba.ac.jp/ event/STM05/index.html）を筑波大学重川研究室の協力を得て作成しメール配信なども利用し、会議の宣伝に努めた。

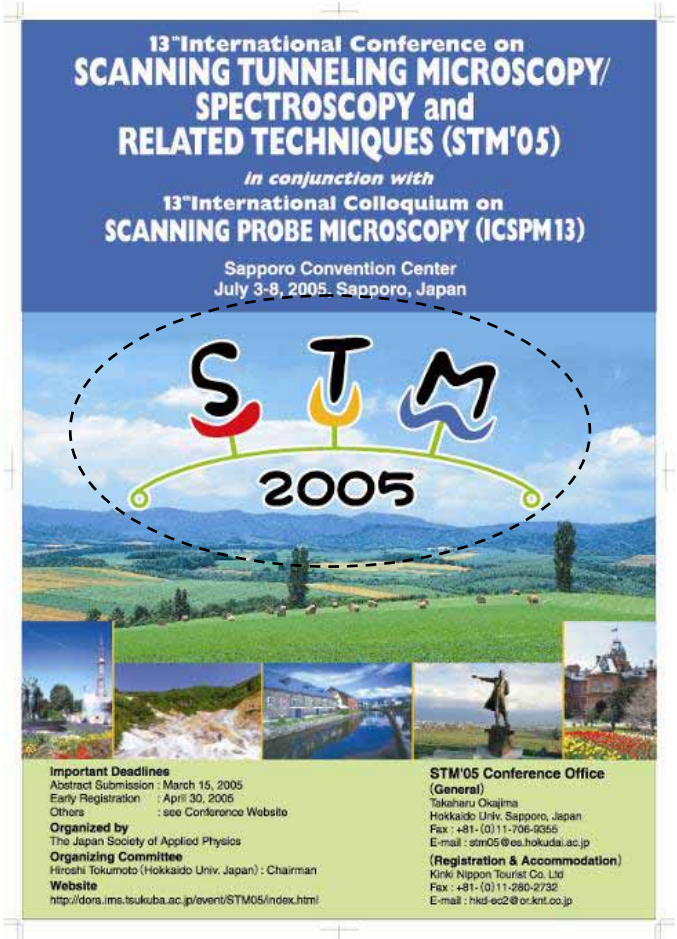

図2．合同国際会議のポスターおよびロゴマーク（点線内）

4．会議の運営

国際会議の開催に当って最も重要で大変な作業は、会議の運営費を如何に集めるかである。通常、募金委員会を組織し会社等にお願いして支援金のお願いをするのが常套手段であるが、経済状態が依然として好転しない社会にあって、この手段は非常に困難であることに鑑み、ナノサイエンス･ナノテクノロジーを中心的研究課題と設定している法人研究所に、本会議の協賛をお願いした（図3）。さらに、SPM 関連装置の製造や販売を精力的に展開されている関連企業（図4）にお願いし、会議に併設して展示会を開催すること（図5）をお願いした。また、希望の展示企業には、会期に渡って組織委員会が借用している講演会場を実費で使っていただき、ユーザーズミーティングを開催していただいた。

図3．協賛を頂いた法人研究所等のロゴマーク

会議の実際の運営は現地実行委員会メンバー、学生アルバイト、ボランティア、ATI、臨時雇用事務職員、等で行った。ボランティアは財団法人札幌国際プラザの運営支援スタッフによりコーディネートされ、新千歳空港では計16名が特に海外からの参加者の案内を、会場では延べ113名の外国語ボランティアが会議場設営から受付、コーヒーや弁当のサービス、エックスカーション等の補助を会期中行った（図6）。

5．参加･論文発表申込状況

5．1　登録参加者

参加登録は、事前登録（会議ホームページからアクセス）とオンサイト（当日）登録の 2 通りで受け付けた。その結果、登録参加者は、39 カ国から 752 人（運営関係者、特別招待者、プレス関係者も含む）で、多い国から順に、日本447人(59%)、韓国61人（8%）、ドイツ46人（6%）、米国35人（5%）、

図4．展示会やポスター時のレフレッシュメントに協力いただいた企業のロゴマーク

図5．併設の SPM 関連企業の展示会風景

「空港班」７月３日(日)　　「会場班／登録受付」７月４日(月)

図6．ボランティアによる運営支援風景

台湾22人(3%)、スイス21人(3%)の順であった(図7、図8)。日本で開催した会議にもかかわらず海外からの参加者(特に、韓国からオンサイトの登録)が多く、SPM ナノテクノロジーの高まりを示すものといえる。さらに付け加えると、夏の札幌の魅力を象徴しているとも言える。

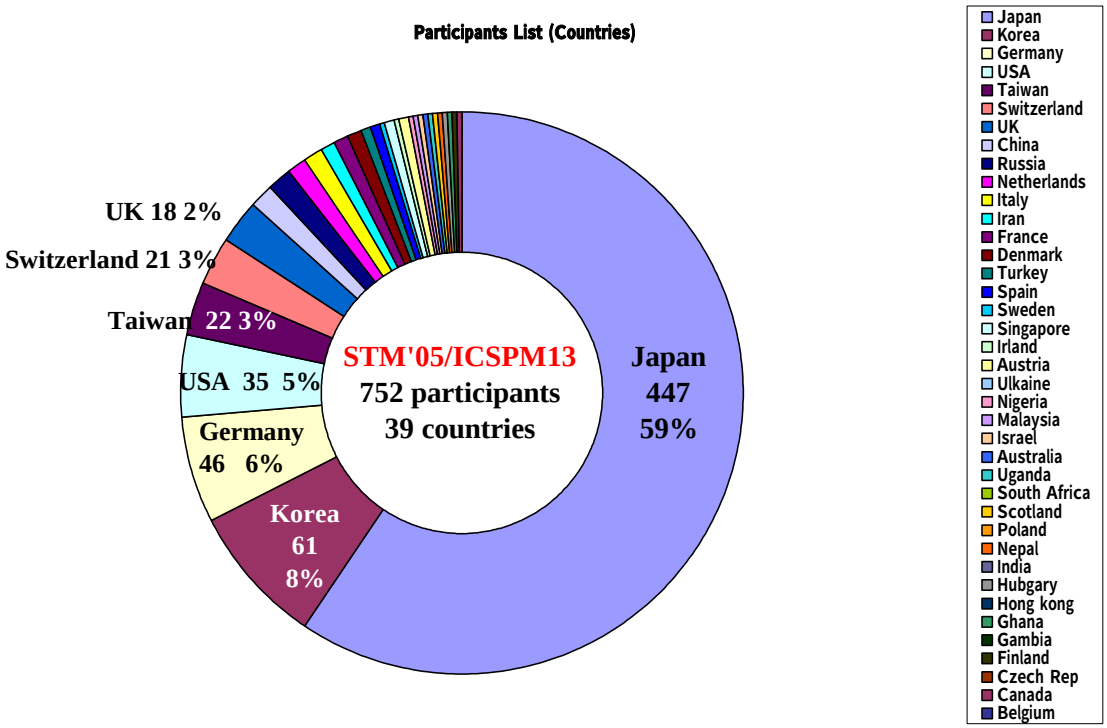

図7. 参加登録者の国別分布

図8. 講演会場前に集合したSTM'05/ICSPM13参加者の写真

5．2　受付論文

受付論文数は 30 カ国から 492 件で、多い国から順に、日本 223 件(45%)、ドイツ 47 件(10%)、韓国 44 件(9%)、米国 23 件 (5%) 、台湾 22 件 (4%) 、英国 21 件 (4%) の順であった (図 9) 。海外からの論文数が全体の半数を超えたことは、ナノテクを支える SPM 技術の重要性が世界レベルで認識されていることの現れである。中でも、参加者数の順と異なりドイツからの発表が多く、ドイツで SPM 研究が非常に活発であることを示している。

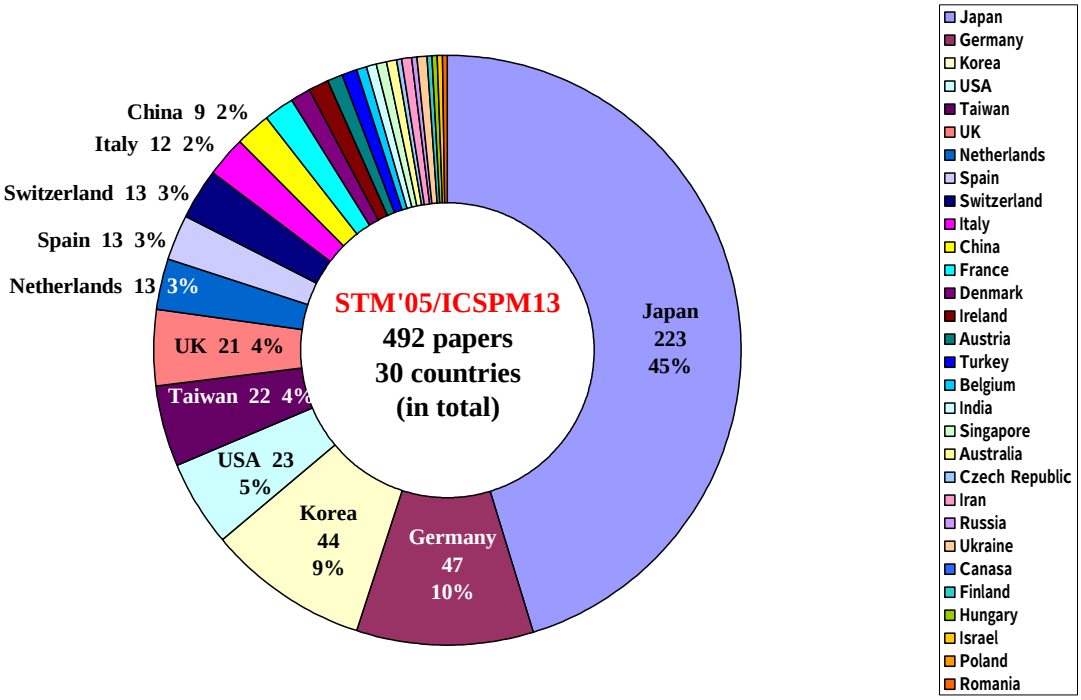

図 9．受付論文の国別分布

受け付けた論文の発表形態は、全体講演 8 件 (2%) 、招待講演 24 件 (5%) 、口頭講演 207 件 (42%) 、ポスター発表 253 件 (51%) であった (図 10) 。

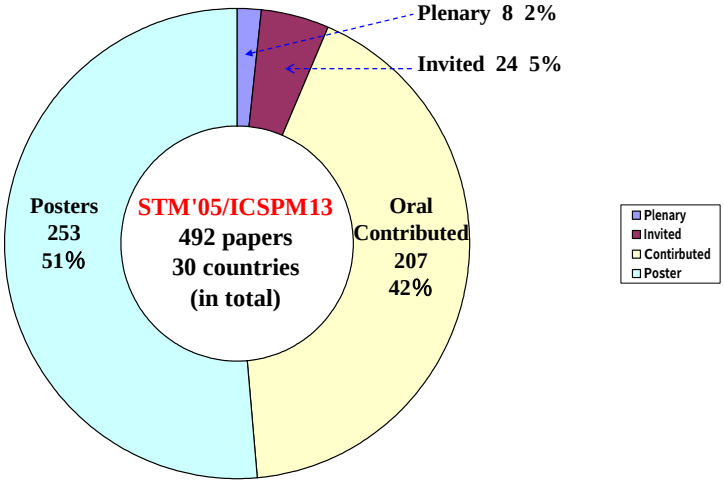

図 10．受け付けた論文の発表形態分布

6．会議の概略

6．1　プログラム構成

講演会は、そのタイムテーブル（図 11、添付表）に示すように 4 日（月）から 6 日（水）の午前中はプレナリー講演（8 件）（図 12）、それ以外の午前･午後の時間帯は 4 つパラレルセッションに分かれて招待講演（24 件）と原著講演（207 件）、4 日から 6 日の夜はポスター講演（253 件；サービス軽食付）を行った。7 日（木）の午後から夜にかけては、コンファレンスエックスカーション（登別温泉で入浴･地獄谷散策、図 13）とコンファレンスバンケット（観光牧場ノーザンホースパークでパーティーと盆踊り余興；図 14）を開催した。また、バンケットの一つの行事として、今回は初めての試みとしてポスター賞を設けすばらしい発表を行った若手研究者を表彰するとともに記念品を贈呈した（図 14）。

7/3 Sun

14:00	Public Lecture in Japanese (Meeting Room 108) (through 17:00)			
16:00	Registration (Entrance Hall) (until 20:00)			
18:00	Welcome Reception (Mid-Sized Halls A & B)			
20:00	End			

7/4 Mon

10:00	Opening (Conference Hall)			
10:15	Plenary Session - I (Conference Hall)			
11:45	Lunch (Served in Entrance Hall)			
13:30	Novel Techniques - I (Mid-sized Hall A)	Spectroscopy - I (Mid-sized Hall B)	Theory & Simulation - I (Meeting Room 107)	Magnetic System - I (Meeting Room 108)
15:30	Break (Complimentary Coffee/Tea)			
16:00	Novel Techniques - II (Mid-sized Hall A)	Spectroscopy - II (Mid-sized Hall B)	Theory & Simulation - II (Meeting Room 107)	Magnetic System - II (Meeting Room 108)
17:30	Break			
17:45	Poster Session - I (Main Hall) (Complimentary Light Meal)			
20:00	End			

7/5 Tue

09:00	Plenary Session - II (Conference Hall)			
10:30	Break (Complimentary Coffee/Tea)			
11:00	Plenary Session - II (continued)			
11:45	Lunch (Served in Entrance Hall)			
13:30	AFM - I (Mid-sized Hall A)	Spectroscopy - III (Mid-sized Hall B)	Bottom-up Process - I / Manipulation - I (Meeting Room 107)	Nanostructuring - I (Meeting Room 108)
15:30	Break (Complimentary Coffee/Tea)			
16:00	AFM - II (Mid-sized Hall A)	Spectroscopy - IV (Mid-sized Hall B)	Bottom-up Process - II / Electronic Devices (Meeting Room 107)	Nanostructuring - II (Meeting Room 108)
17:30	Break			
17:45	Poster Session – II (Main Hall) (Complimentary Light Meal)			
20:00	End			

7/6 Wed

09:00	Plenary Session - III (Conference Hall)			
10:30	Break (Complimentary Coffee/Tea)			
11:00	Plenary Session - III (continued)			
11:45	Lunch (Served in Entrance Hall)			
13:30	AFM - III (Mid-sized Hall A)	Nanostructuring - III (Mid-sized Hall B)	Bio - I (Meeting Room 107)	Catalysis & Electrochemistry - I (Meeting Room 108)
15:30	Break (Complimentary Coffee/Tea)			
16:00	Tip preparation and Functionalization (Mid-sized Hall A)	Nanostructuring - IV / Novel Techniques - III (Mid-sized Hall B)	Bio - II (Meeting Room 107)	Catalysis & Electrochemistry - II (Meeting Room 108)
17:30	Break			
17:45	Poster Session - III (Main Hall) (Complimentary Light Meal)			
20:00	End			

7/7 Thu

09:00	Semiconductors - I (Mid-sized Hall A)	Nanomaterials - I (Mid-sized Hall B)	Manipulation - II (Meeting Room 107)	Structural Analysis - I (Meeting Room 108)
10:30	Break (Complimentary Coffee/Tea)			
10:45	Semiconductors - II (Mid-sized Hall A)	Nanomaterials - II (Mid-sized Hall B)	Manipulation - III (Meeting Room 107)	Structural Analysis - II (Meeting Room 108)
12:00	Break			
12:30	Excursion (at Noboribetsu Hot spring, Lunch in the buses; Come to the parking lot)			
18:30	Banquet (at Northern Horse Park)		(Those who do not participate in the Banquet will return to Sapporo at 19:30.)	
22:30	End (Arrival at Sapporo)			

7/8 Fri

09:00	Semiconductors - III (Mid-sized Hall A)	Optical Phenomena (Mid-sized Hall B)	Oxide - I (Meeting Room 107)	Metals - I (Meeting Room 108)
10:30	Break (Complimentary Coffee/Tea)			
10:45	Semiconductors - IV (Mid-sized Hall A)	Superconductors (Mid-sized Hall B)	Oxide - II (Meeting Room 107)	Metals - II (Meeting Room 108)
12:15	Closing (Mid-sized Hall A)			

図 11. 会議の全体タイムテーブル

図 12. プレナリー講演で講演を聞く参加者

図 13. コンファレンスエックスカーションで地獄谷散策

図 14. コンファレンスバンケットのスナップ写真（鏡割り、食事、盆踊り余興、ポスター賞表彰）

6．2　市民講座

国際会議本体は 7 月 3 日夕刻のレセプションから始まった。それに先立ち、財団法人札幌国際プラザからの要請ならびに STM’05/ICSPM13 合同国際会議で論じられるナノテクノロジーを札幌市民にやさしく紹介するために、「ナノテクノロジーで豊かになろう」と題した市民公開講座を開催した。スタンフォード大学の西義雄教授には「豊かな生活、豊かな社会」、（株）ケイアンドテイ代表取締役の内山哲夫氏には「変革のときに備えよう」と題した講演を通してナノテクノロジーを約 70 名の市民に対してやさしく解説した（図 15）。

西 義雄氏「豊かな生活！豊かな社会！」

内山 晢夫氏「変革の時に備えよう！」

図 15. 市民公開講座の講演風景

6．3　会議講演から

6．3．1　委員長の挨拶から

国際会議の講演は、4 日（2日目）の委員長挨拶から本会議が始まった。委員長は今回の会議においては、ロゴマーク（図1）に象徴される「バイオと先端計測 SPM 技術の融合」の重要性、世の中のニーズの高い分野に力を注ぐとともに装置を提供する研究者側と現場の歩み寄りの重要性、なども議論したいと力説した（図 16）。

図 16. 会議のオープニングで挨拶する国際会議委員長

6．3．2　プレナリー講演から

3日間の午前中には8件のプレナリー講演があった。実際の講演ではSPMに関するものだけでなく、その周辺あるいは波及も加味した講演もいくつかあった。

1．Prof. Klaus Kern (Max Plank Institute)は、“STM beyond Imaging: Probing the Quantum World of Nanostructures”と題して、SPM 技術が単なるイメージング技術にとどまらず量子の世界やナノサイエンスの新たな展開を開く技術ともなっていることなどが紹介された。講演の締めくくりにSPM 技術が支えるナノサイエンス･ナノテクノロジーの将来を図 17 で締めくくった。

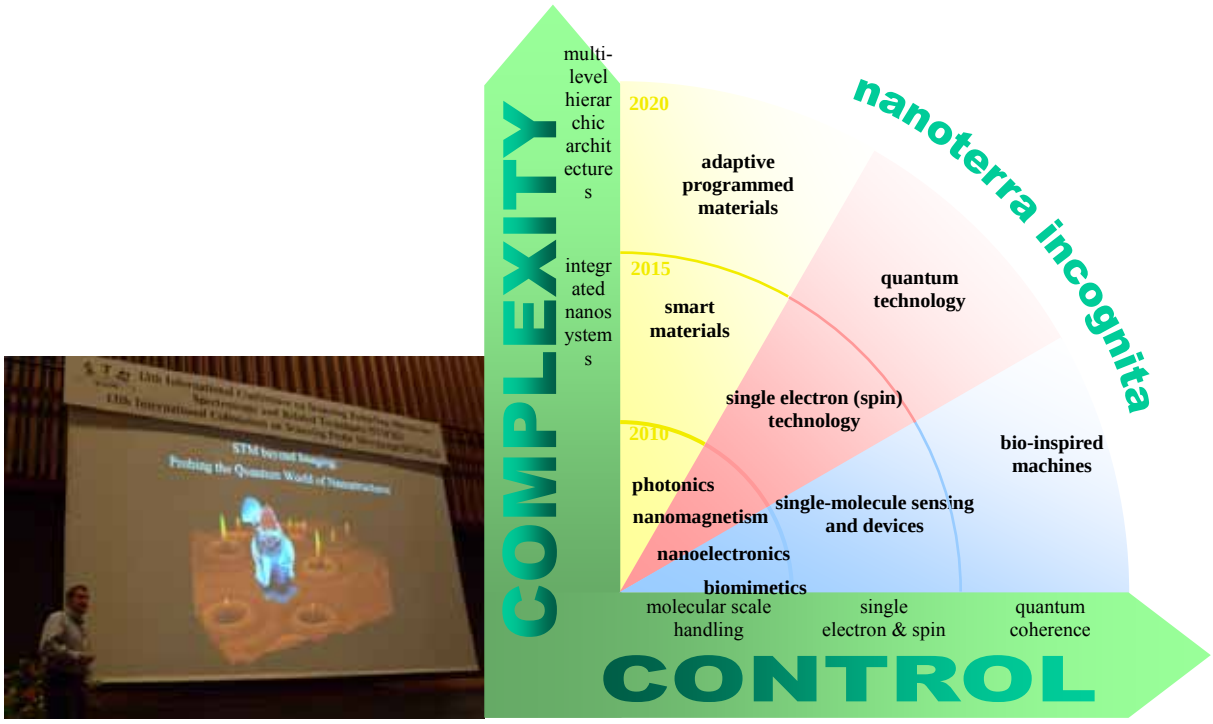

図 17. 講演中の Kern 博士 (左) と提案されたナノサイエンス･ナノテクノロジーの将来像

2. Prof. Masaru Tsukada (Waseda University)は、"Theoretical Exploration of Scanning Probe Microscopy Frontiers"と題して, SPM などに関する理論面の研究や先生が現在取り組んでおられる SPM simulator の構想についても詳しく紹介した (図 18)。

図 18. SPM 理論の将来を語る塚田教授

3. Dr. James S. Murday (Naval Research Laboratory)は、" The New Strategic Plan for the U.S. National Nanotechnology Initiative and its Implications for Instrumentation and Metrology"と題して、米国政府のナノテクノロジー関連政策および世界のナノテクノロジーや SPM 研究の動向についても紹介された (図 19)。「ナノテクノロジー分野の定義の明確化や標準化」、「ナノテクノロジーの環境･安全･健康分野への潜在的な影響に対する調査」、「学生･市民に対するナノテク

ノロジーの教育」などはナノテクノロジーの進歩に対して世界共通の問題であるため，国際的な組織的努力によって解決されるべきであると語った。

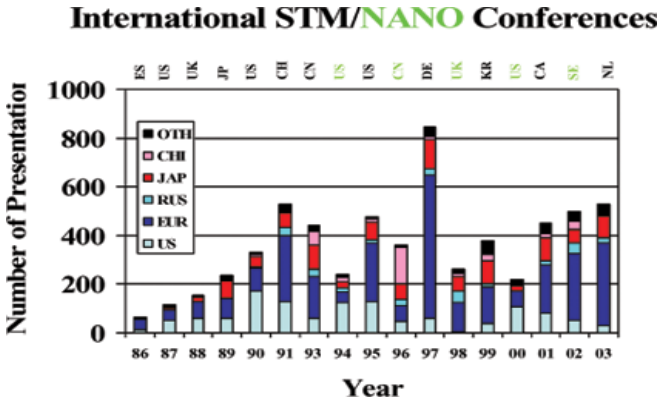

図 19．講演する Murdey 博士（左写真）と、国際 STM 会議と NANO 会議の推移（右図）

4．Prof. Yoshio Nishi (Stanford University)は、“Nanoelectronic Materials and Devices, Challenges and Opportunities”と題して講演し（図 20）、「マイクロエレクトロニクスからナノエレクトロニクスへの変化は幾何学的な縮小だけでは解決できず，科学，工学，生産技術に関する漸進的な進歩と革新的な進歩の組み合わせが必要である 」、「産業界や大学のナノテクノロジー分野における人々や組織にとって重要なのは，広い範囲に及ぶ専門知識と学問分野を超えた相互作用である」、「革新的なナノテクノロジーを利用した集積回路における実際の応用を世の中に出すためには，科学と工学による集中的な努力が必要となるため，実現にはまだ長い道のりがある」の 3 点を指摘した。

図 20．ナノテクノロジーの将来･夢とともに、若者への期待を語る西教授

5．Dr. Andreas J. Heinrich (IBM Alamden)は、” Inelastic STM Spectroscopy at Low Temperatures” と題して、極低温 STM 装置を用いて金属表面でいろいろの吸着原子･分子を操作するとともに

各種量子力学的実験を見事にやってのけた成果（弾性分光と非弾性分光の原理と STM による測定法、Cu 上の CO 分子の操作と振動分光、Mn 孤立原子の g 因子測定、絶縁体および金属表面での近藤効果、NaCl 表面上の Co および Fe 原子の新規非弾性トンネル分光信号、等）を紹介した（図 21）。また、この原子操作技術と表面吸着分子の構造安定性を利用して、原子サイズの情報処理素子のデモも示した。

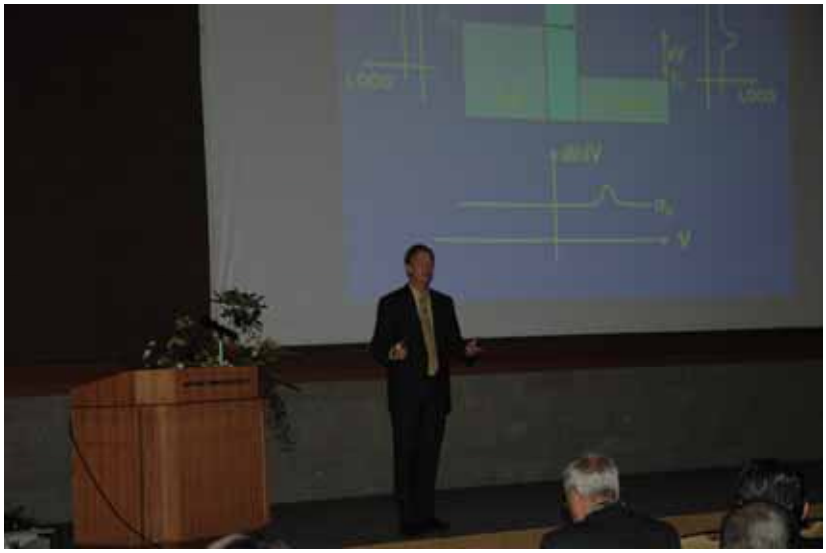

図 21. トンネル分光法詳細に解説する Heinrich 博士

6．Dr. John Maimin (IBM Almaden)は、“Single Spin Detection Using Magnetic Resonance Force Microscopy”と題して、極限まで微細化し力検出能力を改善した AFM 用のカンチレバーを用いた核スピン共鳴時の力変化を検出の原理から測定法まで詳細に解説し、ヘリウム 3 希釈冷凍機中で用いて実際に計測した成果を報告した（図 22）。

図 22. 磁気共鳴力顕微鏡の原理を説明する Mamin 博士

7．Prof. Toshio Ando (Kanazawa University)は、“High-speed AFM for Studying the Dynamic Behavior of Protein Molecules at Work”と題して、ミオシン蛋白などのアクチンフィラメント上をすべることに起因するモーター蛋白質のエネルギー源解明の研究に大きな寄与をすることなどを独自に開発した溶液中高速AFM画像を示しながら詳細に紹介した（図23）。生命科学の研究分野では，より生体に近い状態での細胞やタンパク質などの観察ニーズが高まっている中、注目された。

図 23．高速 AFM による溶液中でのモーター蛋白の動的画像を紹介する安藤教授

8．Dr. Chunli Bai (Chinese Academy of Science)は、“Atomic and Molecular Process under STM World”と題して、最近目覚しい成果を上げている中国における SPM ナノテクノロジーをサーベイするとともに、表面に吸着した原子の STM 探針による操作や極性分子の電圧印加に伴う姿勢制御などを、詳細に紹介した（図 24）。

図 24．質問に答える Bai（白　春礼）博士

6．3．3 その他の講演から

国際会議の講演では、SPM 技術および物理学，化学，生物学，ナノテクノロジーなど幅広い分野への応用などのトピックスについて最新の研究成果が報告された。なかでも、大会委員長がオープニングで力説した「バイオと先端計測 SPM 技術の融合」の重要性、世の中のニーズの高い分野に力を注ぐとともに装置を提供する研究者側と現場の歩み寄りの重要性、などに関する講演は、プレナリー講演だけでなく一般招待講演（24 件）や原著講演発表（207 件の口頭発表、253 件のポスター発表）にも相次ぎ、特に、生体試料観察に関する先進的な発表が数多くあった。講演内容の詳細はここでは省略し、プログラムを本報告書に添付するので参照して頂きたい。さらに、日経ナノテクノロジーplus の黒川編集長の依頼で近藤一行記者を会議に招待し、講演会に参加していただくとともに講演者にインタビュー取材などを積極的に行っていただき、下記のようなタイトルで会議の講演トピックスとしてまとめられている。これも合わせて参照して頂きたい。

1．走査トンネル顕微鏡の国際学会，札幌で開催中
2．米 NNI の Murdy 氏，ナノテクノロジーの社会受容促進に関し，国際的連携を呼びかける
3．Stanford 大学 教授の西氏，半導体の将来について語る
4．STM 国際会議，生体試料観察に関する発表相次ぐ
5．スイス Neuchtel 大，膝治療などに活用する走査型フォース内視鏡を開発
6．次世代データ記憶メディアの開発で SII ナノテクノロジーの MFM に高い関心

6．3．4 ポスター賞

STM‘05 会議としては初めてポスター賞を設けて優秀な発表を表彰した（図 14、図 25）。選考にあたっては、この分野での若手研究者（女性 9 名、男性 2 名）をエンカレッジすることを念頭におき、組織委員長が関係者の意見を聞きながら行った。ここにそのリストを掲げる。

1．KIM, Ansoon Ms., (KAIST, Mon-Pos-21), Surface Reactions of a Bifunctional Molecule for Layer-by-layer Growth: Ethylene Diamine on Ge(100)
2．OHBUCHI, Chigusa Dr (JST, Mon-Pos-52), Striped Ag Films Grown at Low Temperature on Si(111)-4×1 In Chains
3．YOO, Kyung-Ah Ms., (Myongji University, Tue-Pos-5), Characterization of Piezoresistive and Optical Read-out Methods for Microcantilever-based Biosensor
4．HOEPPENER, Stephanie Dr. (Eindhoven University of Technology, Tue-Pos-38), Fabrication of Nanodimensional Device Structures - A Bottom-up Approach by Electro-oxidative Nanolithography
5．SHIN, Minjung Ms., (Sungkyunkwan Univ., Tue-Pos-47), Alignment of λ-DNA Wires on Organic Monolayer Surface Patterned with AFM Lithography
6．KIM, Yousoo Dr., (RIKEN, Wed-Pos-42), Controlled Surface Dynamics of a Single Acetylene Molecule by Vibrational Excitation Using a Low-Temperature STM
7．SIN, Mandy Lai Yi Ms., (The Chinese University of hong kong, Wed-Pos-15), Structural Evolution of Mixed C60 and C70 Fullerene Layers on Ag(100)
8．BEUTTLER, Mirjam Ms., (Max-Planck-Institute for Biochemistry, Wed-Pos-11), Probing of the

Proteasome-Protein Interaction with Force Spectroscopy

9. KIM, Hyo Won Ms., (Seoul National University, Wed-Pos-21), Geometric and Electronic Structure of Thinned GaN Nanowires: an STM Study

10. MIYATO, Yuji Mr., (Kyoto University, Mon-Pos-36), Surface Potential Measurements of Carbon Nanotubes on Substrate Modified with Self-Assembled Monolayers Investigated by KFM

11. BOBISCH, Christian Mr., (University of Duisburg-Essen, Wed-Pos-26), BEEM-measurements on Ag/Si(111):H

このほか、TOBENAS, Susana Ms.(EPFL) には、若い学生でありながら座長を務めていただくなど会議運営に多大の協力を頂いたので、特別に組織委員長から感謝状を贈呈した (図 26) 。

図 25. ポスター賞の表彰状と記念品

図 26. 組織委員長から感謝状を贈呈を受け喜びの Ms. Susana TOBENAS .(EPFL)

6．3．5 論文集

会議で発表された論文のうちで原稿を投稿されたものについては、通常の JJAP 誌の査読過程を通してチェックする。査読を経た論文は会議のプロシーディングスとして 2006 年 3 月に応用物理学会の論文誌 Japanese Journal of Applied Physics (JJAP)から出版される。

7. 会議主催、協賛、謝辞

本会議は、図3にまとめてあるように応用物理学会主催のもと科学研究費補助金事業、ナノテクノロジー総合支援プロジェクトセンター、日本学術振興会ナノプローブ第167委員会、産業技術総合研究所ナノテクノロジー研究部門、物質・材料研究機構、理化学研究所、新世代研究所、札幌国際プラザの協賛事業として開催した。また、SPM関連企業34社(図4)の展示会を併設し(図5)、会議を盛り上げるとともに運営にも多大の協力を頂いた(図 27)。さらに、海外から参加者を援助するため、札幌国際プラザ手配によるボランティア(72 名、図6)にも会議運営支援を頂き市民参加の学会ともなった。また、日経ナノテクノロジーplus には、会議中取材をしていただき、トピックスの紹介をしていただいた。ここに関係者各位に深く感謝申し上げます(図 28)。

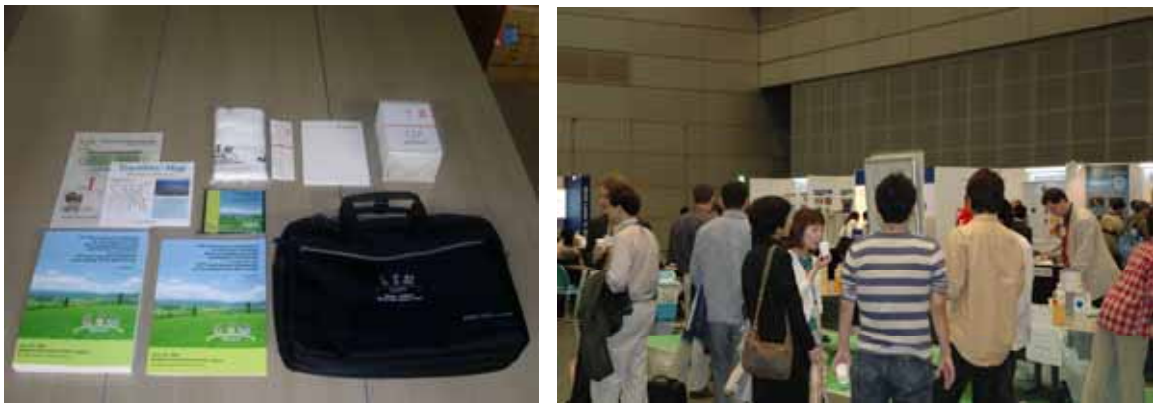

図 27. 会議参加者に配られた会議マテリアルと休憩時間中のレフレッシュメントサービス風景。アブストラクト集、プログラム集以外は、展示企業および札幌国際プラザの厚意によるものである。

図 28. 協賛団体および展示 SPM 関連企業に謝意を表す組織委員長

8. 今後の会議動向

STM 国際会議の今後の開催については、会議中に拡大国際組織委員会(Yoshimura, Meyer, Bai, Xue, Tokumoto, Montelius, Koenraad, Wiesendanger、Shigekawa, Chang, Stroscio, Kuk, Murday,

Nishikawa、Okajima）を開催し、STM 会議は NANO 会議に発展的に合流し、SPM/NANO 会議として開催することとなった（正式には、NANO 国際会議の国際組織委員会に諮り承認を得ることが条件であるが、STM 国際組織委員との兼任が多いため承認されたものと見なす）。2006 年はスイス国バーゼル市（ICN&T2006;www.icnt2006.ch）で、2008 年は NIST の Dr. Joe Stroscio が中心となり米国西海岸で、2010 年は CAS の Prof. Qi-Kun Xue が中心となり中国で開催する。一方、ICSPM は 2006 年に例年通り 12 月に開催する予定である。

7. 終わりに

本国際会議の計画･運営には、国際組織委員会委員各位をはじめ国内の組織委員会委員各位（全ての委員長名のみ 2 頁に掲載）の全面的な協力を頂いた。さらに、ナノテクノロジー総合支援プロジェクトセンター鈴木敦氏（プレナリー招待講演者の招聘を代行）、札幌市国際プラザ和島朋広氏、近畿日本ツーリスト㈱山下恵二氏、アルバック・ファイ（株）鈴木峰晴氏、筑波大学重川研究室秋津和美秘書、ATI スタッフ、豊田工業大学吉村雅満教授、北海道大学電子科学研究所附属ナノテクノロジー研究センター岡嶋孝治助教授、畔原宏明助手、沖崎裕子 STM'05 事務局員、吉村美由紀 STM'05 事務局員、北海道大学情報科学研究科情報エレクトロニクス専攻末岡和久教授、加納美智代氏、渡辺幸恵氏、小鹿かおる氏、北海道大学触媒化学研究センター鈴木秀士助手、北海道大学大学院工学研究科松田理助教授、北海道大学創成科学研究機構細井浩貴研究員には、会議開催中にも多大の協力を頂いた。また、和島朋広氏、岡嶋孝治助教授、畔原宏明助手、沖崎裕子事務局員、吉村美由紀事務局員、STM'05 ホームページ（写真借用）には、本報告書の作成に当っても協力を頂いた。多くの皆さんの参加を得たことも本会議を成功裡に進められたことの大きな要因です。ここに、現地実行委員メンバー（図 29）を代表して深く感謝の意を表します。

図 29. 慰労会後の現地実行委員メンバーの集合写真

(添付)

STM'05: Conference Program

Sunday July 3

Public Lecture in Japanese (Meeting Room 108) (through 17:00)

14:00	Nishi, Y. & Uchiyama, T.		Nanotechnology, and How Would It Contribute to Our Better Life and Society

16:00 **Registration (Entrance Hall) (until 20:00)**

18:00 **Welcome Reception (Mid-sized Hall A & B)**

20:00 **End**

Monday July 4

Plenary Session - I (Conference Hall) *Kuk, Y. (Seoul Univ.)*

10:00 **Opening (Conference Hall)**

10:15	Kern, K.	Mon-P-1	STM beyond Imaging: Probing the Quantum World of Nanostructures
11:00	Tsukada, M.	Mon-P-2	Theoretical Exploration of Scanning Probe Microscopy Frontiers

11:45 **Lunch (Served in Entrance Hall)**

Novel Techniques - I (Mid-sized Hall A) *Miles, M.J. (Univ. of Bristol)*

13:30	Saito, A.	Mon-1-C1	Scanning Tunneling Microscope Combined with Hard X-ray Micro-Beam of High Brilliance from Synchrotron Radiation Source
13:45	Dede, M.	Mon-1-C2	Scanning Hall Probe Microscopy (SHPM) Using Quartz Crystal AFM Feedback
14:00	Stark, R.W.	Mon-1-C3	Multimode Electrostatic Force Microscopy for the Detection of Injected Charges
14:15	Xiao, X.	Mon-1-C4	A New STM Mode with Time Dependent Tunneling Spectroscopy for Studying Fast Surface Diffusion
14:30	Weaver, J.M.R.	Mon-1-C5	Accurate Scanning Thermal Microscopy Thermometry for Semiconductor Devices
14:45	Tomoda, M.	Mon-1-C6	Imaging of Megahertz Thermal Wave Diffusion by Optical Heterodyne Force Microscopy
15:00	Reading, M.	Mon-1-I7	Nanothermal Analysis (n-TA) and Photothermal IR Micro-Spectroscopy (PTMS), at Sub-250 nm Spatial Resolution **(Invited)**

Spectroscopy - I (Mid-sized Hall B) *Shigekawa, H. (Univ. of Tsukuba)*

13:30	Crain, J.N.	Mon-2-C1	Observation of End States in One-Dimensional Atom Chains
13:45	Kahng, S.-J.	Mon-2-C2	Position-Resolved Scanning Tunneling Spectroscopy of Single Wall Carbon Nanotubes
14:00	Arai, T.	Mon-2-I3	Bias-Voltage Dependence of Chemical Bonding Force Detected by Noncontact Atomic Force Microscopy/Spectroscopy **(Invited)**
14:30	Azuma, Y.	Mon-2-C4	Single Electron Counting on Single Nanodot due to Coulomb Blockade by nc-AFM
14:45	Miyahara, Y.	Mon-2-C5	Detection of Single-Electron Charging in Individual InAs Quantum Dot by Electrostatic Force Measurement
15:00	Rontani, M.	Mon-2-C6	Imaging Quasi-Particle Wavefunctions in Semiconductor Quantum Dots via Tunneling Spectroscopies
15:15	Mizoguchi, T.	Mon-2-C7	Spin-Polarized Scanning Tunneling Spectroscopy with Spin-Polarized Electrons from Optically Pumped GaAs(110)

Theory & Simulation - I (Meeting Room 107) *Tsukada, M. (Waseda Univ.)*

13:30	Kantorovich, L.	Mon-3-I1	Playing Football on Reactive Surfaces - an Experimental and Theoretical Study **(Invited)**
14:00	Chen, C.J.	Mon-3-C2	Reciprocal STM and AFM: Probing Tip States with Known Samples
14:15	Sader, J.E.	Mon-3-C3	Quantitative Force Spectroscopy using Frequency Modulation Atomic Force Microscopy - Theoretical Foundations
14:30	Caciuc, V.	Mon-3-C4	Non-Contact Atomic Force Microscopy Simulations of Graphite(0001) using Empirical and *ab-initio* Methods
14:45	Corni, S.	Mon-3-C5	Modeling the ElectroChemical Scanning Tunneling Microscopy of Azurin
15:00		Mon-3-C6	-- removed --
15:15	Magonov, S.	Mon-3-C7	True Molecular-Scale Imaging in Atomic Force Microscopy: Experiment and Modeling

Magnetic System - I (Meeting Room 108) *K. Koike (Hokkaido Univ.)*

13:30	Schwarz, A.	Mon-4-C1	Visualization of the Barkhausen Effect
13:45	von Bergmann, K.	Mon-4-C2	Magnetism of Fe on W(001) Studied by Spin-Polarized STM
14:00	Ferriani, P.	Mon-4-C3	Two-Dimensional Antiferromagnetism of Fe and Co Monolayers on W(001) Studied by Spin-Polarized STM
14:15	Berbil-Bautista, L.	Mon-4-C4	Ferromagnetic Domains in Dy(0001) Films on W(110) Studied by Means of Spin-Polarized-STM
14:30	Wiesendanger, R.	Mon-4-I5	Recent Progress in Spin-Polarized Scanning Tunneling Spectroscopy **(Invited)**
15:00	Krause, S.	Mon-4-C6	Spin-Polarized STM Through an Adsorbate Layer: Sulfur-Covered Fe/W(110)
15:15	Kim, T.-H.	Mon-4-C7	Magnetic Interaction between Single-Crystal Fe-Nano-Dot Arrays: an SP-STM Study

15:30 **Break (Complimentary Coffee/Tea)**

Novel Techniques - II (Mid-sized Hall A) *Yoshimura, M. (Toyota Tech. Inst.)*

16:00	Miles, M.J.	Mon-5-C1	High-speed AFM of Biomolecular Structures
16:15	Sugawara, Y.	Mon-5-C2	Sub-Nanometer Resolution Dynamic Force Microscopy in Liquids
16:30	Yang, X.J.	Mon-5-C3	Studying the Lateral Composition in Ge Quantum Dots on Si (001) by Conductive Atomic Force Microscopy
16:45	Takahashi, T.	Mon-5-C4	Intermittent Bias Application in Kelvin Probe Force Microscopy for Accurate Determination of Surface Potential
17:00	Nishikawa, O.	Mon-5-C5	Scanning Atom Probe Study of the Dissociation of Organic Molecules on Titanium Oxide
17:15	Sato, T.	Mon-5-C6	Field Emission Observations with a Scanning Tunneling Microscope

Spectroscopy - II (Mid-sized Hall B) *Arai, T. (JAIST)*

16:00	Yakunin, A.M.	Mon-6-C1	Mn in GaAs Studied by Cross-sectional STM: From a Single Impurity to Ferromagnetic Delta Layers
16:15	Grandidier, B.	Mon-6-C2	Acceptor states in GaAs studied by X-STS at 5K
16:30	Hulsken, B.	Mon-6-C3	Measuring the Au(111) Electronic Surface State at the Solid/Liquid Interface
16:45	Mallet, P.	Mon-6-C4	Defect-Induced Localization of the $ErSi_2$/Si(111) Surface State
17:00	Ono, M.	Mon-6-C5	Local Potential Profile on the Si(111)-$\sqrt{3}\times\sqrt{3}$-Ag Surface by Scanning Tunneling Spectroscopy
17:15	Kemerink, M.	Mon-6-C6	Invasive Spectroscopy on Soft Condensed Mater: Experiment and Model

Magnetic System - II (Meeting Room 107) *Wiesendanger, R. (Univ. of Hamburg)*

16:00	Pietzsch, O.	Mon-7-C1	Spin-Polarized Scanning Tunneling Spectroscopy of Co Islands on Cu(111)
16:15	Yamada, T.K.	Mon-7-C2	Spin-polarized Sacnning Tunneling Microscopy/Spectroscopy Study of MnAu(001) Thin Films
16:30	Subagyo, A.	Mon-7-C3	Charge Ordering of Reconstructed Fe_3O_4(001) Surfaces Studied by Spin-Polarized Scanning Tunneling Microscopy
16:45	Nagaoka, K.	Mon-7-C4	Magnetic-moment-induced Local Superstructure On A Graphite Surface Observed By SP-STM
17:00	Takezaki, T.	Mon-7-C5	Magnetic Field Measurement by Means of Scanning Magnetoresistance Microscope with Spin-Valve Sensor
17:15	Koblischka, M.R.	Mon-7-C6	High Frequency-MFM-Imaging of Harddisk Write Heads and Soft Magnetic Materials

Theory & Simulation - II (Meeting Room 108) *Kantorovich, L. (King's College London)*

16:00	Totsuka, H.	Mon-8-C1	Theoratical Analysis of Coverage Dependence of Local Tunneling Barrier Height on a Na/Al(100) Surface
16:15	Sasaki, T.	Mon-8-C2	First-Principles Calculation Method for Self-Consistent Ground-State Electronic Structures of Nanostructures Attached to Semi-Infinite Crystalline Bulks

16:30	Tanaka, M.	Mon-8-C3	First-Principles Study on Nanoscale Properties of Displacement Current Between Two Parallel Electrodes
16:45	Hirose, K.	Mon-8-C4	Current Image of H-Adsorbed Si(001) by First-Principles Electron-Transport Calculation
17:00	Ono, T.	Mon-8-C5	First-Principles Study on Electron Conduction Property of Nanowires
17:15	Kim, H.	Mon-8-C6	Adsorption of Hydrogen Atoms on the Si(111)4×1-In Surface
17:30	**Break**		
17:45	**Poster Session - I (Main Hall) (Complimentary Light Meal)**		
20:00	**End**		

Tuesday July 5

	Plenary Session - II (Conference Hall)		*Kern, K. (Max-Plack-Insti.)*
9:00	Murday, J.S.	Tue-P-1	The New Strategic Plan for the U.S. National Nanotechnology Initiative and its Implications for Instrumentation and Metrology.
9:45	Nishi, Y.	Tue-P-2	Nanoelectronic Materials and Devices, Challenges and Opportunities
10:30	**Break (Complimentary Coffee/Tea)**		
11:00	Heinrich, A.J.	Tue-P-3	Inelastic STM Spectroscopy at Low Temperatures
11:45	**Lunch (Served in Entrance Hall)**		
	AFM - I (Mid-sized Hall A)		*Meyer, E. (Univv. of Basel)*
13:30	Kawakatsu, H.	Tue-1-I1	Atomic Force Microscopy with a Heterodyne Laser Doppler Interferometer and Photothermal Excitation for in-Liquid Imaging **(Invited)**
14:00	Kageshima, M.	Tue-1-C2	Atomic Force Microscopy Sensor Fabricated with Length-Extensional Quartz Oscillator for Liquid Environment
14:15	Pakarinen, O.H.	Tue-1-C3	High Resolution Atomic Force Microscopy of Gold Nanoclusters on the KBr(001) Surface
14:30	An, T.	Tue-1-C4	Atomically Resolved Imaging by Frequency Modulation Noncontact Atomic Force Microscopy Using Quartz Length-Extension Resonator
14:45	Müller, F.	Tue-1-C5	Capacitive Atomic Force Mircoscopy in Dynamic Mode and other Experiments with Double Cantilever Devices
15:00	Ichii, T.	Tue-1-C6	Molecular-scale Investigations on Mixed Alkanethiol Self-assembled Monolayers by Noncontact Atomic Force Microscopy
15:15	Akiyama, K.	Tue-1-C7	Development of a Metal Probe Attached to a Si Cantilever
	Spectroscopy - III (Mid-sized Hall B)		*Mamin, J. (IBM Almaden)*
13:30	Hammiche, A.	Tue-2-C1	Photothermal IR Micro-Spectroscopy (PTMS), and its Applications in Cell Biology
13:45	Kawahara, T.	Tue-2-C2	Tunneling Spectroscopic Study for the Fluorescein Derivatives Attached to Deoxyribonucleic Acid
14:00	Song, Y.J.	Tue-2-C3	HOMO, LUMO and Derived States of a Pentacene Molecule on Gold Substrate
14:15	Elemans, J.A.A.W.	Tue-2-C4	Scanning Tunneling Microscopy and Spectroscopy Study of Porphyrins at the Au(111)/Alkane Interface
14:30	Bartels, L.	Tue-2-I5	Lessons from Chemistry for STM-based Excitation of Surface Reactions **(Invited)**
15:00	Komeda, T.	Tue-2-C6	Selection Rules Observed in Vibrational Spectroscopy with Inelastic Tunneling Spectroscopy
15:15	Albrecht, T.	Tue-2-C7	Transistor Effects in Redox Molecules at Room Temperature
	Bottom-up Process - I / Manipulation - I (Meeting Room 107)		*Nakamura, M. (Chiba Univ.)*
13:30	Classen, T.	Tue-3-C1	One Dimensional Metal-Organic Chains on Cu(110)
13:45	Ramoino, L.	Tue-3-C2	Layer-selective Self-assembly of Porphyrins on Ultrathin Insulators
14:00	Linderoth, T.R.	Tue-3-C3	Conformational Changes and Chiral Ordering in Adsorbed Molecular Layers Investigated by Time-resolved STM
14:15	Stöhr, M.	Tue-3-C4	Creation of Supramolecular Polymers via a Surface Induced Reaction
14:30	Ojima, K.	Tue-3-C5	Potential Mapping of Top-contacted Junctions: Molecules and Nanotransfer Printing Electrode
14:45	Akai-Kasaya, M.	Tue-3-C6	Polaron Injection into a One-dimensional Polydiacetylene Nanowire
15:00	Yamachika, R	Tue-3-I7	Controlled Atomic Doping of a Single C_{60} Molecule **(Invited)**
	Nanostructuring - I (Meeting Room 108)		*Sugawara, Y. (Osaka Univ.)*
13:30	Fukui, K.	Tue-4-C1	Formation of One-dimensional C_{60} Rows on TiO_2(110)-1×2 and Their Local Polymerization Induced by Tunneling Electrons
13:45	Degawa, M.	Tue-4-C2	Fluctuation Mediated Evolution of Nano-size Crystallites
14:00	Nysten, B.	Tue-4-I3	3D Organic Structures Grown onto Chemically Nano-Patterned Surfaces: an AFM Study **(Invited)**
14:30	Spillmann, H.	Tue-4-C4	Supramolecular Patterned Surfaces Driven by Cooperative Assembly of C_{60} and Porphyrins on Metal Surfaces
14:45	Fujikawa, K.	Tue-4-C5	The Study of Mechanism of Ni Growth Mode on TiO_2(110)
15:00	Berdunov, N.	Tue-4-C6	Self-Assembly of Metal Clusters on Oxide Nanotemplates
15:15	Ansari, Z.A.	Tue-4-C7	Self-Assembled Ge Nano-Clusters Grown on Si(111)-7×7 at Elevated Temperatures
15:30	**Break (Complimentary Coffee/Tea)**		
	AFM - II (Mid-sized Hall A)		*Hasegawa, Y. (Univ. of Tokyo)*
16:00	Li, Y.J.	Tue-5-C1	Identification of Subsurface Atom Species Using NC-AFM
16:15	Saida, D.	Tue-5-C2	Ability in Quantitative Measurement of Current-Induced Magnetic Field by Magnetic Force Microscopy
16:30	Koeble, J.	Tue-5-C3	Scanning Kelvin Probe Microscopy in Ultrahigh Vacuum: Electrical Characterisation of Nanodevices at Variable Temperature.
16:45	Akiyama, T.	Tue-5-C4	Scanning Probe with Tuning Fork Sensor, Microfabricated Silicon Cantilever and Conductive Tip for Microscopy at Cryogenic Temperature
17:00	Meyer, E.	Tue-5-I5	Variable Temperature Force Microscopy Experiments with atto-Newton Sensitivity **(Invited)**
	Spectroscopy - IV (Mid-sized Hall B)		*Bartels, L. (Univ. of California at Riverside)*
16:00	Kawagoe, T.	Tue-6-C1	Magnetic Imaging of Cr (001) Films with Spiral Growth Terraces Studied by Spin-Polarized Scanning Tunneling Spectroscopy
16:15	Wegner, D.	Tue-6-C2	Electronic Structure and Dynamics of Quantum-Well States in Thin Yb-Metal films
16:30	Wiebe, J.	Tue-6-C3	The Spectroscopic Signature of Stacking Faults and Dislocation Lines on Co(0001)
16:45	Bauer, A.	Tue-6-C4	Surface-Induced Kondo Effect for Gd and Ho Atoms Embedded in Lu(0001)
17:00	Colonna, S.	Tue-6-C5	STM Observation of a Mott-Insulator Phase at the 1T-$TaSe_2$ Surface
17:15	Vázquez de Parga, A.L..	Tue-6-C6	Direct Observation of Non-collinear Coupling between Ferromagnetic Layers Grown on an Antiferromagnetic Surface
	Bottom-up Process - II / Electronic Devices (Meeting Room 107)		*Linderoth, T.R. (Univ. of Aarhus)*
16:00	Fujihira, M.	Tue-7-C1	Single Molecular Conductivity Measurements by STM under UHV
16:15	Clair, S.	Tue-7-C2	Metal-Directed Assembly Using Textured Substrates: Fe, Co - Terephthalate Coordination Networks and Ribbons on Au(111)
16:30	Yamada, F.	Tue-7-C3	Surface Potential and Capacitance Measurement of Molecules on Insulating Substrate
16:45	Zhu, J.	Tue-7-C4	Imaging Single Electron Charging in Carbon Nanotubes with Non-Contact Atomic Force Microscopy
17:00	Nakamura, M.	Tue-7-C5	Development of Atomic-Force-Microscope Potentiometry for Precise Potential Mapping of Working Thin-Film Transistors
17:15	Mena-Osteritz, E.	Tue-7-C6	3D Self-Assembly of Organic Semiconductors: Towards Molecular Electronics
	Nanostructuring - II (Meeting Room 108)		*Takahashi, T. (Univ. of Tokyo)*
16:00	Katano, S.	Tue-8-C1	Reversible Chemical Modification of CH_3NC on Pt(111) by Scanning Tunneling Microscope
16:15	Rahman, M.M.	Tue-8-C2	Electron Standing Wave Analysis in an STM Vacuum Gap for Nano-Structure Fabrication on Si Surfaces
16:30	Lee, G.	Tue-8-C3	Nano-Scale Inhomogeneities and Fluctuations in the Surface Quasi-One Dimensional System
16:45	Xu, H.	Tue-8-C4	Cobalt Nanowires Fabrication on Atomic Nitrogen-templated Cu(210) Surface

17:00	Cai, Q.	Tue-8-C5	Growth Behaviors and Evolutions of Epitaxial Er Nanostructures Self-organized on the Vicinal Si(001) Surface
17:15	Kimura, K.	Tue-8-C6	Control and Visualization of Polymer Chain Orientation by Friction Force Microscopy
17:30	**Break**		
17:45	**Poster Session - II (Main Hall) (Complimentary Light Meal)**		
20:00	**End**		

Wednesday July 6

	Plenary Session - III (Conference Hall)		*Heinrich, A.J. (IBM Almaden)*
9:00	Mamin, J.	Wed-P-1	Single Spin Detection Using Magnetic Resonance Force Microscopy
9:45	Ando, T.	Wed-P-2	High-speed AFM for Studying the Dynamic Behavior of Protein Molecules at Work
10:30	**Break (Complimentary Coffee/Tea)**		
11:00	Bai, C.	Wed-P-3	Atomic and Molecular Process under STM World
11:45	**Lunch (Served in Entrance Hall)**		
	AFM - III (Mid-sized Hall A)		*Kawakatsu, H. (Univ. of Tokyo)*
13:30	Hu, SQ.	Wed-1-C1	Observation of Subharmonics and Chaos in Tapping Mode Atomic Force Microscopy
13:45	Hölscher, H.	Wed-1-C2	Dynamic Force Spectroscopy in Vacuum, Air, and Liquids Using the Constant Excitation Mode
14:00	Kindt, J.	Wed-1-I3	Advances in Fast AFM Technology **(Invited)**
14:30	Zoriniants, G.	Wed-1-C4	Polarization Anomaly in Near-Field Magneto-Optical Microscopy Designed for Spindynamics Studies
14:45	Miyake, K.	Wed-1-C5	Measurement of Mechanical Properties of Bulk and Thin Film Materials by AFM Indentation
15:00	Torricelli, G.	Wed-1-C6	Studies of Two Damping Channels Controlled by the Near Field Distance: Johnson Noise and Thermal Electromagnetic Field Fluctuations
15:15	Gómez-Navarro, C.	Wed-1-C7	Electronic Transport Properties of Ion Irradiated Single Walled Carbon Nanotubes
	Nanostructuring - III (Mid-sized Hall B)		*Matsumoto, T. (Osaka Univ.)*
13:30	Sheehan, P.E.	Wed-2-C1	Direct Deposition of Electronic Materials with Thermal DPN
13:45	Song, A.M.	Wed-2-C2	Scanning Probe Microscope Based Nanolithography on Conducting Polymer Films
14:00	van Schaik, J.H.K.	Wed-2-C3	Surface Templating by Electro-oxidative Nanolithography - Dynamic Studies of the Patterning by Force Spectroscopic Investigations
14:15	Suter, K.	Wed-2-C4	Local Oxidation of Titanium Using a Dynamic Mode Operated Tuning Fork Probe with Microfabricated Silicon Cantilever
14:30	Naujoks, N.	Wed-2-I5	Electrical AFM Draws Charge Patterns to Guide Particle Deposition in Liquids **(Invited)**
15:00	Pellegrino, L.	Wed-2-C6	Nanopatterning of Transition Metal Oxides by the Voltage-Biased Tip of an Atomic Force Microscope
15:15	Egger, S.	Wed-2-C7	Applications of Dynamic Shadow Mask Technique
	Bio - I (Meeting Room 107)		*Tobenas, S. (EPFL)*
13:30	Imer, R.	Wed-3-I1	Scanning Force Endoscope **(Invited)**
14:00	Otsuka, Y.	Wed-3-C2	Structure and Electrical Property of DNA Molecules Immobilized on Patterned Hydrophobic / Hydrophilic Surface
14:15	Matsumoto, T.	Wed-3-C3	Conduction through Cytochrome c Molecules
14:30	Taniguchi, M.	Wed-3-C4	Reversible Disociation-Association Interaction of Regulatory Light Chains on Single Oyster Myosin Molecule observed by Atomic Force Microscopy
14:45	Ros, R.	Wed-3-C5	Single Molecule Recognition by AFM Force Spectroscopy: From Transcriptional Regulation to Supramolecular Chemistry
15:00	Campbell, P.A.	Wed-3-C6	Discriminating Cavitation Induced Membrane Damage from Chemical Fixing Artifacts with AFM
15:15	Mikamo, E.	Wed-3-C7	AFM Imaging of Ribosomes Lined on mRNA at Translation State
	Catalysis & Electrochemistry - I (Meeting Room 108)		*Fukui, K. (Tokyo Inst. of Tech.)*
13:30	Schnadt, J.	Wed-4-C1	O/Ag(111) Revisited Using STM and XPS: New Structures and Structure Models
13:45	Berkó, A.	Wed-4-C2	Identification of K-CO Ionic Complex on Cu(110) Surfaces by STM-STS and TDS Methods
14:00	Vang, R.T.	Wed-4-C3	Towards Atomic Scale Design of Catalysts
14:15	Namai, Y.	Wed-4-C4	Controlled Structure of Hydroxyl Groups on TiO_2(110) Surface with Linear Oxygen Vacancy Studied by Scanning Probe Microscopy
14:30	Sasahara, A.	Wed-4-C5	Kelvin Probe Force Microscope Observation of Pt Clusters on TiO_2 Surface
14:45	Matsushima, T.	Wed-4-C6	STM and NEXAFS Studies of N_2O Orientation on Pd(110)
15:00	Besenbacher, F.	Wed-4-I7	Atomic-Scale Investigations on the Role of Ni and Co Promoters in MoS_2-based Hydrotreating Catalysts **(Invited)**
15:30	**Break (Complimentary Coffee/Tea)**		
	Tip preparation and Functionalization (Mid-sized Hall A)		*Hoelscher, H. (Univ. of Muenster)*
16:00	Nagase, M.	Wed-5-C1	Carbon Multi-probes on a Si Cantilever for Pseudo-MOSFET
16:15	Soppera, O.	Wed-5-C2	New Nanofunctionalized Photopolymer Probes for SNOM Applications
16:30	Tanemura, M.	Wed-5-C3	Direct Growth of a Single Carbon Nanofiber onto a Tip of Scanning Probe Microscopy Induced by Ion Irradiation
16:45	Dobson, P.S.	Wed-5-C4	A Batch Fabricated SECM-AFM Probe
17:00	Sulzbach, T.	Wed-5-C5	Advanced Tips for High Resolution Magnetic Force Microscopy
17:15	Akita, S.	Wed-5-C6	Buckling Behavior of Carbon Nanotube Probe
	Nanostructuring - IV / Novel Techniques - III (Mid-sized Hall B)		*Yamada, H. (Kyoto Univ.)*
16:00	Ishida, T.	Wed-6-C1	*In-situ* TEM observation of the Gold Nano-Contact Formation by Electric Field
16:15	Isoda, S.	Wed-6-C2	Selective Molecular Adsorption into a Nano-domain from a Mixture Solution
16:30	Chung, H.J.	Wed-6-C3	Electronic Structure and Transport Properties of Polypyrrole: an STM and an SGM Study
16:45	Ando, A.	Wed-6-C4	Simultaneous Mechanical and Electrical Measurement of Nanostructures by Self-sensing Piezoresistive Cantilever in Scanning Electron Microscope
17:00	Naitou, Y.	Wed-6-C5	Mapping of Ferroelectric Response by Scanning Capacitance Microscopy with Self-Sensing Conductive Probe
17:15	Suzuki, S.	Wed-6-C6	Simultaneous Observation of Magnetic Domain Structure and Topography in FeCo by Using Scanning Lorentz Force Microscopy (SLFM)
	Bio - II (Meeting Room 107)		*Ros, R. (Univ. of Bielefeld)*
16:00	Fukuma, T.	Wed-7-C1	True Atomic Resolution in Liquid by Frequency-Modulation Atomic Force Microscopy
16:15	Yaminsky, I.V.	Wed-7-C2	Concurrence of Intermolecular Forces in Monolayers
16:30	Tobenas, S.	Wed-7-C3	Study of DNA in "Glass Like State" on Different Substrates by AFM
16:45	Yamaguchi, T.	Wed-7-C4	Observation of Ordered Arrays of Adsorbed Lysozyme by STM
17:00	Higgins, M.J.	Wed-7-C5	Determining the Role of Water at Biomolecular Interfaces
17:15	Jeon, K.	Wed-7-C6	Structural Investigation of Feeder Cells Supporting Human Embryonic Stem Cells under Various Conditions Using Mesoscopic AFM Imaging
	Catalysis & Electrochemistry - II (Meeting Room 108)		*Matsushima, T. (Hokkaido Univ.)*
16:00	Blanco, J.M.	Wed-8-C1	The Origin of Contrast in STM Images of Oxygen on Pd(111) and its Dependence on Tip Structure and Tunnelling Parameters.
16:15	Itaya, K.	Wed-8-C2	*In situ* STM of Supramolecular Assembled Adlayers on Au Single Crystal Electrodes

16:30	Wandelt, K.	Wed-8-C3	Molecular Structure and Redox Behavior of Viologenes Adsorbed on a Chloride Precovered Cu(100) Electrode: an Electrochemical STM Study
16:45	Arima, K.	Wed-8-C4	Atomic-Scale Evaluation of Si(001) Surfaces Finished by Novel Global Planarization Process
17:00	Hirai, N.	Wed-8-C5	In-situ EC-AFM Observation on Au(100) in Room Temperature Ionic Liquid
17:15	Yau, S.-L.	Wed-8-C6	Elucidation of the Deposition Processes and Spatial Structures of Alkanethiol and Arylthiol Molecules Adsorbed on Pt(111) Electrodes with In situ Scanning Tunneling Microscopy
17:30	**Break**		
17:45	**Poster Session - III (Main Hall) (Complimentary Light Meal)**		
20:00	**End**		

Thursday July 7

	Semiconductors - I (Mid-sized Hall A)		*Wright, O.B. (Hokkaido Univ.)*
9:00	Smoliner, J.	Thu-1-I1	Cross Sectional Ballistic Electron Emission Microscopy for Schottky Barrier Height Profiling on Heterostructures **(Invited)**
9:30	O'Shea, S.J.	Thu-1-C2	Nanoscale Spectroscopy and Imaging of Metal-Organic Interfaces using BEEM
9:45	Kobayashi, K.	Thu-1-C3	Dopant Charge Detection on GaAs(110) by STM-BH
10:00	Reusch, T.C.G	Thu-1-C4	Reversible Changes of Phosphorus Dopants in the Si(001) Surface Induced by Scanning Tunneling Microscopy
10:15	Jordan, K.	Thu-1-C5	STM Study of the Fe/Ge (001) Interface
	Nanomaterials - I (Mid-sized Hall B)		*Hashizume, T. (Hitachi Ltd.)*
9:00	Kuk, Y.	Thu-2-I1	Chain Molecules : Geometric and Electronic Structures and Transport Property **(Invited)**
9:30	Ashino, M.	Thu-2-C2	Atomic-Resolution Dynamic Force Microscopy and Three-Dimensional Force Field Spectroscopy of Single-Walled Carbon Nanotubes
9:45	Kulik, A.J.	Thu-2-C3	Mechanical Properties and Anisotropy of Carbon nanotubes and Biological Microtubules
10:00	Albrecht, P.M.	Thu-2-C4	UHV-STM Characterization of Carbon Nanotubes on Semiconductor Surfaces
10:15	Nakaya, M.	Thu-2-C5	Control of Nanoscale Reversible Chemical Reaction of C_{60} Molecules Using an STM Tip
	Manipulation - II (Meeting Room 107)		*Komeda, T. (Tohoku Univ.)*
9:00	Liu, Z.	Thu-3-C1	Thermochemical Hole Burning on Charge-Transfer Complexes for Ultrahigh Density Data Storage
9:15	Ohara, M.	Thu-3-C2	Hopping Phenomenon of Methyl-Thiolate on Cu (111)
9:30	Fölsch, S.	Thu-3-I3	Quantum Confinement in Straight, Kinked, and Branched Cu/Cu(111) Ad-Atom Chains **(Invited)**
10:00	Choi, B.-Y.	Thu-3-C4	Transformation of Electronic Structure Induced by Conformational Transition in a Single Molecule
10:15	Stroscio, J.A.	Thu-3-C5	Atom Manipulation Dynamics of Co and Cu on Cu(111) Surfaces
	Structural Analysis - I (Meeting Room 108)		*Kageshima, M. (Osaka Uni.v)*
9:00	Cho, S.	Thu-4-C1	Stress-induced Orientation Transformation from (5 5 12) to (7 7 17)
9:15	Krupski, A.	Thu-4-C2	STM Study of Fe Clusters on $Al_2O_3/Ni_3Al(111)$
9:30	Nakajima, K.	Thu-4-C3	Polymer Surfaces as Model Samples for Dynamic-Mode AFM
9:45	Ohno, Y.	Thu-4-C4	Atomistic Structure of Spontaneously-Ordered GaInP
10:00	Koenraad, P.M.	Thu-4-I5	Intermixing, Decomposition and Segregation During InAs Dot and Ring Formation on GaAs and AlAs Analyzed by Cross-sectional STM **(Invited)**
10:30	**Break (Complimentary Coffee/Tea)**		
	Semiconductors - II (Mid-sized Hall A)		*Smoliner, J. (Vienna Univ. of Tech.)*
10:45	Nomura, H.	Thu-5-C1	Identification Mechanism of Atomic Species on Ge/Si(111)-(7×7) Surface by Using NC-AFM/KPFM
11:00	Rezek, B.	Thu-5-C2	Understanding Functionalized Diamond Surfaces via Atomic and Kelvin Force Microscopy
11:15	Suddards, M.E.	Thu-5-C3	Low Temperature Scanning Capacitance Microscopy
11:30	Hasegawa, Y.	Thu-5-I4	STM and AFM; Which is Better for Surface Structural Analysis? Non-contact AFM Studies on Ge/Si(105) Surface **(Invited)**
	Nanomaterials - II (Mid-sized Hall B)		*Tomitori, M. (JAIST)*
10:45	Kelly, K.F.	Thu-6-I1	Investigation of Single Molecule Motion and Molecular Machines: Driving Nanocars **(Invited)**
11:15	Suzuki, H.	Thu-6-C2	Molecular Overlayer Structure of Thermally Unstable Molecule Deposited by A Spray-jet Molecular Beam Deposition System
11:30		Thu-6-C3	-- removed --
11:45	Hirade, M.	Thu-6-C4	Energy Spectra of Electrons Backscattered from Sample Surfaces with Hetero Structures using Field Emission Scanning Tunneling Microscopy
	Manipulation - III (Meeting Room 107)		*O'Shea, S.J. (IMRE)*
10:45	Sugimoto, Y.	Thu-7-C1	Atom Assembly Using Atomic Force Microscopy at Room Temperature
11:00	Pérez, R.	Thu-7-C2	Nanomanipulation using Only Mechanical Energy
11:15	Socoliuc, A.	Thu-7-C3	Can Two Solids Bodies Slide Past Each Other With Negligible Friction?
11:30	Hwang, I.-S.	Thu-7-C4	Probing Dynamics of a Phase Transition of Two-Dimensional Nano-Domains with STM Imaging and Manipulation
11:45	Yin, F.	Thu-7-C5	Field Induced Formation of Nanoscale Gold Fingers on the Au(111) Surface with the STM
	Structural Analysis - II (Meeting Room 108)		*Takeuchi, O. (Univ. of Tsukuba)*
10:45	Fritz, T.	Thu-8-C1	The Growth of Titanylphthalocyanine on Au(111): a Combined STM, LEED, and Molecular Modeling Study
11:00	Pai, W.W.	Thu-8-C2	Adsorption of Methyl (CH_3) and Methylnitrene (NCH_3) Radicals on Cu Surfaces Studied by STM
11:15	Wagner, Th.	Thu-8-C3	The Adsorption of 3,4,9,10 Perylenetetracaboxlic Dianhydrid on Cu(100)
11:30	Komura, M.	Thu-8-C4	AFM Images of Cleaved Cross Sections of Microphase Separated Films with Hexagonally Arranged Cylinder Structure
11:45	Merz, L.	Thu-8-C5	Spontaneous Reorganisation of Alkoxylated Fréchet-Dendrons on Graphite
12:00	**Break**		
12:30	**Excursion (at Noboribetsu Hot spring, Lunch in the buses; Come to the parking lot)**		
18:30	**Banquet (at Northern Horse Park)**	Those who do not participate in the Banquet will return to Sapporo at 19:30.	
22:30	**End (Arrival at Sapporo)**		

Friday July 8

	Semiconductors - III (Mid-sized Hall A)		*Xue, Q.-K. (Chin. Academy of Sci.)*
9:00	Kohsaka, Y.	Fri-1-I1	Imaging Local Charge Density in a Doped Mott Insulator **(Invited)**
9:30	Yamazaki, S.	Fri-1-C2	Study of Surface Electrical Conduction at Glass-Crystal Transition in Au/Si(111) Surface Superstructures: Variable Range Hopping at Glass Phase
9:45	Liu, C.	Fri-1-C3	Influence of Adatoms on the Two-Dimensional Electron Gas in the Surface of Si(111)-$\sqrt{3}\times\sqrt{3}$-Ag
10:00	Yoshida, S.	Fri-1-C4	Nanoscale Band Structure Analysis of Semiconductor through Surface Photovoltage Observation by STM
10:15	Zhang, P.P.	Fri-1-C5	Surface Electronic Transport in Ultrathin Silicon-on-Insulator
	Optical Phenomena (Mid-sized Hall B)		*Nakajima, K. (Tokyo Inst. of Tech.)*
9:00	Cricenti, A.	Fri-2-C1	Micro-radiographs Stored in Lithium Fluoride Films Observed by Scanning Near-Field Optical Microscopy
9:15	Liu, H.W.	Fri-2-C2	Fluorescence of Porphyrin Thin Films on Conductive Substrates by STL

9:30	Inoue, Y.	Fri-2-I3	Nonlinear and Near Field Effects of Tip-Enhanced Raman Microscopy for Nano-Imaging **(Invited)**
10:00	Dawson, P.	Fri-2-C4	Spectral Analysis of Light Emission in Scanning Tunnelling Microscopy
10:15	Nakamura, Y.	Fri-2-C5	Observation of Coulomb Blockade of Individual Ge Quantum Dots Using Scanning Tunneling Microscopy
	Oxide - I (Meeting Room 107)		*Onishi, H. (Kobe Univ.)*
9:00	Lauritsen, J.V	Fri-3-C1	Water Dissociation on TiO_2 imaged by Atom-resolved Non-contact AFM
9:15	Minato, T.	Fri-3-C2	Spatial distribution of defect states on TiO2(110)
9:30	Brezna, W.	Fri-3-C3	Mapping of Local Oxide Properties by Quantitative Scanning Capacitance Spectroscopy
9:45	Brun, C.	Fri-3-C4	Observation of Charge Density Waves in Rubidium Blue Bronze $Rb_{0.3}MoO_3$ by Scanning Tunneling Microscopy
10:00	Kurnosikov, O.	Fri-3-C5	Surface Superstructures of Ordered Layers of Al_2O_3 on $Ni_3Al(001)$
10:15	Pang, C.L.	Fri-3-C6	Scanning Probe Microscopy Studies of Oxide on Oxide Growth
	Metals - I (Meeting Room 108)		*Wiebe, J. (Hamburg Univ.)*
9:00	Ma, X.-C.	Fri-4-C1	Quantum Well States Facilitated Oxygen Chemisorption on Pb(111) Thin Films
9:15	Sharma, H.R.	Fri-4-C2	Scanning Tunneling Microscopy of Quasicrystal Surfaces
9:30	Saida, M.	Fri-4-C3	Local Tunneling Barrier Height Observations of a NiAl (110) Surface
9:45	Calleja, F.	Fri-4-C4	Quantum Size Effects in Lead Nanodots Grown on Cu(111)
10:00	Wenderoth, M.	Fri-4-I5	Probing Noble Metal Bulk States with the STM **(Invited)**
10:30	**Break (Complimentary Coffee/Tea)**		
	Semiconductors - IV (Mid-sized Hall A)		*Kohsaka, Y. (Cornell Univ.)*
10:45	Gómez-Rodríguez, J.M.	Fri-5-C1	Direct Observation of the (3×3) to (√3×√3) Phase Transition in Pb/Si(111) by Variable Temperature Scanning Tunneling Microscopy
11:00	Ishigami, M.	Fri-5-C2	Atomic Scale Investigation of Schottky Barrier Formation: Lead on Si(111)
11:15	Naitoh, Y.	Fri-5-C3	Structural Manipulation on Si(001) Surface at 5K Controlled by AFM Tip
11:30	Hossain, Md.Z.	Fri-5-C4	Observation of Surface Si-C Species on the Si(100)c(4×4) Surface at 80 K
11:45	Suwa, Y.	Fri-5-C5	First Principles Study of Dihydride Chains on H-Terminated Si(100)-2×1 Surface
12:00	Kimura, K.	Fri-5-C6	Two-dimensional Carrier Profiling on Operating Si-MOSFET by Scanning Capacitance Force Microscopy and SCM
	Superconductors (Mid-sized Hall B)		*Kobayashi, K. (Ochanomizu Univ.)*
10:45	Ternes, M.	Fri-6-C1	Midgap States and Josephson Supercurrent in Asymetric Superconducting Tunneljunctions
11:00	Ichimura, K.	Fri-6-C2	Scanning Tunneling Spectroscopy on Organic Superconductors
11:15	Nishio, T.	Fri-6-C3	Low-temperature Scanning Tunneling Microscopy on Nanometer-size Superconductors
11:30	Xue, Q.	Fri-6-I4	Superconductivity Modulated by Quantum Size Effects **(Invited)**
	Oxide - II (Meeting Room 107)		*Sawamura, M. (Hokkaido Univ.)*
10:45	Maris, G.	Fri-7-I1	Towards Spin-Polarized STM on Magnetite (110) **(Invited)**
11:15	Endo, K.	Fri-7-C2	AFM Study on High-Quality Thin Films of Perovskite-Related Oxides Grown by MOCVD toward Novel Nano-Electronic Devices
11:30	Teichert, C.	Fri-7-C3	Conducting Atomic-Force Microscopy to Study Electrical Homogeneity of High-k Dielectric Thin Films on the Nanometer Scale
11:45	Sugihara, T.	Fri-7-C4	Scanning Nonlinear Dielectric Microscopy for Observation of Nano-scale Three-dimensional Ferroelectric Domain Structure
	Metals - II (Meeting Room 108)		*Wenderoth, M. (Univ. of Gätingen)*
10:45	Meier, F.	Fri-8-C1	Oberservation of a Surface State on the Pt(111) Surface
11:00	Cazacu, A.	Fri-8-C2	Strain Induced Nanostructure Formation in Ultrathin Cr Films on Mo (110) Substrate
11:15	Yoshimura, M.	Fri-8-C3	Growth of Fe on Pt(111) and Alloy Formation
11:30	Fujii, J.	Fri-8-C4	Self Organization of Non Magnetic Impurities on Fe(100)
11:45	Nakamura, J.	Fri-8-C5	Formation of Ni_3S_3 clusters on a Ni(111) surface by dissociation of H_2S
12:15	**Closing (Mid-sized Hall A)**		

Poster Session I - Monday, July 4 (Main Hall 17:45-20:00)

Bio		
	Mon-Pos-1	-- removed --
Azehara, H.	Mon-Pos-2	Force Measurements on Adsorbed Lipid Bilayer Membranes by AFM
Arakawa, H.	Mon-Pos-3	Zeptomoles Level Detection of Protein Molecules in Combination of Atomic Force Microscope and Total Internal Reflection Fluorescence Microscope
Sato, H.	Mon-Pos-4	Preparation of Supramolecular Porphyrin Polymer on Surface
Campbell, P.A.	Mon-Pos-5	Dislocation Mediated Dissolution of the Amino Acid L-Valine
Campbell, P.A.	Mon-Pos-6	Rapid Optimisation of Fixation Time on Cells via Elasticity Mapping
Sugiyama, S.	Mon-Pos-7	Attempt to Apply Scanning Probe Microscopy to Genetic Analysis
Mizutani, T.	Mon-Pos-8	Spatial Distribution of Stiffness on Biomaterial Gels Measured by Wide-Range Scanning Probe Microscopy
Hida, A.	Mon-Pos-9	Diagnosis of *Osteogenesis Imperfecta* Collagen Molecules by Scanning Tunneling Microscopy
Takagi, A.	Mon-Pos-10	Observation of Various Porphyrinoids Adsorbed on a Substrate by Using AFM/STM
Structural Analysis		
Wang, C.C.	Mon-Pos-11	AFM Image Analysis applied on Study of Dispersion of Filler in Polymers
Kang, H.-G.	Mon-Pos-12	Various Conditions Afftecing an Oxidization of YBCO Superconducting Thin Films during the AFM Lithography
Cricenti, A.	Mon-Pos-13	Chemically Resolved Imaging of Biological Cells by Free Electron Laser Infrared Scanning Near-Field Optical Microscopy
Yoshimura, M.	Mon-Pos-14	Scanning Probe Microscopy Study on Nafion Films
Baik, J.Y.	Mon-Pos-15	Direct Observation Of π-Bonds Functionalized On Si(111) 7×7 Surface By 1,3-butadiene
Seo, J.M.	Mon-Pos-16	Cyclic Transformation of 1-D Structures during Homoepitaxy of Si(5 5 12)-2×1
Oka, H.	Mon-Pos-17	Interaction of Herringbone Ridge with Dislocation on Au(111) Surfaces
Semiconductors		
Yoo, Y.K.	Mon-Pos-18	CMP Metrology with Atomic Force Profiler
Lin, D.-S.	Mon-Pos-19	Atomistic View of the Recombinative Desorption of H_2 from H/Si(100)
Hahn, J.R.	Mon-Pos-20	Adsorption Structures of Benzene on a Si(5 5 12)-2×1 Surface: A combined STM and Theoretical Study
Kim, A.	Mon-Pos-21	Surface Reactions of a Bifunctional Molecule for Layer-by-layer Growth: Ethylene Diamine on Ge(100)
Matsumoto, T.	Mon-Pos-22	Kinetic and Thermodynamic Control by Chemical Bond Rearrangement on a Si(001) Surface
Bannani, A.	Mon-Pos-23	Energy Loss of Conducting Electrons in Noble Metals
Wenderoth, M.	Mon-Pos-24	Spatially Resolved Scanning Tunneling Spectroscopy of Shallow Acceptors in Gallium Arsenide
Bae, S.-S.	Mon-Pos-25	Adsorption and Reaction of Methanol on Ge(100)
Metals		
Bartels, L.	Mon-Pos-26	On Walking and Waltzing Molecules
Xu, M.	Mon-Pos-27	Oxygen-Induced Surface Structures of Nb(111) Investigated by STM

Kralj, M.	Mon-Pos-28	STM and SXRD Study of Au/Pd(110) Structures
Oxide		
Lo, R.-L.	Mon-Pos-29	AFM Nano-Lithography on Hafnium Oxide Thin Films
Pang, C.L.	Mon-Pos-30	Scanning Tunneling Microscopy Study of the Adsorption of Ammonia on Rutile TiO_2(110)
Magnetic System		
Smoliner, J.	Mon-Pos-31	Ballistic Electron Transport in Spin Valve Transistors
	Mon-Pos-32	-- removed --
	Mon-Pos-33	-- removed --
Seo, J.	Mon-Pos-34	Antiferromagnetic Coupling in Patterned Ferromagnetic Dot Arrays
Catalysis & Electrochemistry		
Katoh, J.	Mon-Pos-35	Investigation of Machining Mechanism in Elastic Emission Machining (EEM) on the Atomic Scale
Electronic-device		
Miyato, Y.	Mon-Pos-36	Surface Potential Measurements of Carbon Nanotubes on Substrate Modified with Self-Assembled Monolayers Investigated by KFM
Chang, T.C.	Mon-Pos-37	Electrical Analysis of Amorphous Silicon Thin-Film Transistors under Mechanical Strain
Liu, P.T.	Mon-Pos-38	Influence of Visible Light Illumination on Organic Polymer Thin Film Transistors (OTFTs) with Indium-Tin-Oxide Electrodes
Bottom-up Process		
Tanaka, S.	Mon-Pos-39	FM-NCAFM Study of Heat-Treated Oxide Surfaces with Organic Molecules
Karasawa, H.	Mon-Pos-40	Nanometer-scale Observation of Metalized- DNA Nanowires using a Scanning Near-field Optical Microscopy
Manipulation		
Adam, O.A.O.	Mon-Pos-41	Single-atom Manipulation of Embedded Co in Cu(001)
Nanomaterials		
Yang, P.P.	Mon-Pos-42	Imaging of Nanometer-scale Recording Bits on Phase-change Layer of a Rewritable Optical Disk using Conductive–Atomic Force Microscopy
	Mon-Pos-43	-- removed --
Inoue, H.	Mon-Pos-44	Voltage-dependent STM Images of One-dimensionally Arranged Sexithienyl(6T) Molecules on Ag (110)
Okino, H.	Mon-Pos-45	Resistance Measurements of Epitaxial Cobalt Silicide Nanowires on Si(110)
Kemerink, M.	Mon-Pos-46	3D Conductivity Mapping
Chang, L.W.	Mon-Pos-47	The Electrical Conductivity of a Single Multi-wall Carbon Nanotube
Gopakumar, T.G.	Mon-Pos-48	Scanning Tunnelling Microscopy on Ultra Thin Organic Layers of Phthalocyanine and Naphthalocyanines on HOPG (0001)
Nanostructuring		
Ma, Y.-R.	Mon-Pos-49	Tip-Induced Ion Implantation and Stoichiometry Test via Atomic Force Microscopy
Ji, T.	Mon-Pos-50	Effects of Si on Er Nanowires Formed on the Vicinal Si(001) Surface
Yu, S.-Y.	Mon-Pos-51	A New Period-Doubled Modulation on the In/Si(111)4×1 Surface Induced by Defects
Ohbuchi, C.	Mon-Pos-52	Striped Ag Films Grown at Low Temperature on Si(111)-4×1 In Chains
Okada, A.	Mon-Pos-53	Oxygen Induced Surface Structure of Mo(110) Studied by Scanning Tunneling Microscopy
Dharmadhikari, C.V.	Mon-Pos-54	Some Aspects of Nanostructure Formation on Hydrogen Passivated Silicon Surface Using Scanning Tunneling Microscopy
Chiang, C.I.	Mon-Pos-55	Patterning of Co Nanoclusters supported on Al_2O_3/NiAl(100)
Inada, M.	Mon-Pos-56	Scanning Tunneling Microscopy of the Porphyrin-based Molecule on TiO_2 Surface
AFM		
Kim, A.	Mon-Pos-57	Frequency Modulation Technique in Scanning Capacitance Microscopy
Yamaoka, T.	Mon-Pos-58	High-Resolution Magnetic Force Microscopy with Low Moment Probe and Q-Control in a Vacuum
Heike, S.	Mon-Pos-59	Surface Potential Measurement by Atomic Force Microscope Using a Quartz Resonator
Schirmeisen, A.	Mon-Pos-60	Velocity Dependence of Energy Dissipation in Dynamic Force Microscopy: Hysteresis versus Viscous Damping
Hattori, M.	Mon-Pos-61	A New Fabrication Method of Small Cantilevers
	Mon-Pos-62	-- removed --
Kawai, S.	Mon-Pos-63	Ultra-small Amplitude Dynamic Force Microscopy with the Second Flexural Mode of the Cantilever
Such, B.	Mon-Pos-64	NC-AFM Investigation of Indium-rich InP(001) Surface
Matsuyama, E.	Mon-Pos-65	Development of Radio Frequency STM for ESR Spin Detection
Tip preparation and Functionalization		
Chang, M.N.	Mon-Pos-66	Field-sensitive Cobalt-ball Tips Prepared by Electrochemical Reduction
Novel Techniques		
Takahashi, T.	Mon-Pos-67	A Numerical Estimation Method for Potential Determination in Kelvin Probe Force Microscopy
Kim, E.P.	Mon-Pos-68	Design and Construction of a Variable Temperature Scanning Tunneling Microscope
Negishi, R.	Mon-Pos-69	Development of the 4-Probe Scanning Tunneling Microscopy with Combined Scanning Electron Microscopy
Takata, K.	Mon-Pos-70	Domain Structures of Magnetic Heads Observed Using Strain Imaging
Kambara, H.	Mon-Pos-71	Construction of a Dilution Refrigerator Based Ultra-Low Temperature Scanning Tunneling Microscope
	Mon-Pos-72	-- removed --
Arita, M.	Mon-Pos-73	Scanning Tunneling Spectroscopy of Fe Nano Particle system with In-situ Transmission Electron Microsocpy
Spectroscopy		
Yonei, K.	Mon-Pos-74	Applications of SPS Mapping Measurements
Park, Y.D.	Mon-Pos-75	Mapping of Surface Potential and Capacitance Spectroscopy of Silicon Nanocrystals Using Scanning Probe Microscopy
Mallet, P.	Mon-Pos-76	STM Study of Charge Transport from 2D Metallic Nanoislands on Si(111)
Katano, S.	Mon-Pos-77	Local Electronic State of 1,3-Butadiene Adsorbed on Pd(110) Surface: STM and STS Studies
Kim, H.	Mon-Pos-78	Real Space Imaging of One-Dimensional Standing Waves: Direct Evidence of a Tomonaga-Luttinger Liquid
Balatsky, A.V.	Mon-Pos-79	Fourier Transfrom STM, Inelastic Electron Tunneling and Bosonic Spectral Function
Matsumoto, C.	Mon-Pos-80	Observation of Water Molecules Using an LT-STM
Optical Phenomena		
Satoh, N.	Mon-Pos-81	Dynamic Force Microscopy by Dissipative Force Modulation using a Piezoelectric Cantilever for Near-field Light Detection
Mitra, J.	Mon-Pos-82	Photon Emission at the Step Edges of a Single Crystalline Gold Surface Investigated by Scanning Tunneling Microscopy.
Uehara, Y.	Mon-Pos-83	Scanning Tunneling Microscope Light Emission Spectroscopy of Aggregated Molecules
Theory & Simulation		
Yu, B.D.	Mon-Pos-84	First-Principles Study of Step Oxidation at Vicinal Si(001) Surfaces
Hirose, K.	Mon-Pos-85	RTM/NEGF Method for the Ab Initio Calculations of Electron Transport through Atomic-Scale Contacts.
Kobayashi, N.	Mon-Pos-86	First-principles Calculations of Quantum Transport in a Single Molecule
Nakamura, J.	Mon-Pos-87	Friction in Atomic Scale

Bio		
Kwon, J.	Tue-Pos-1	A Controlled Environmental Setup for Liquid AFM Imaging of Bio-membranes and Bio-molecules
Kajita, T.	Tue-Pos-2	Subnanometer Resolution Imaging by Dynamic Force Microscopy in Liquid
Okajima, T.	Tue-Pos-3	FM-mode AFM for Biological Imaging in Liquids
Tsukamoto, K.	Tue-Pos-4	Atomic Force Microscopic Study for Dissection and Recovery of Chromosome Fragments
Yoo, K.-A.	Tue-Pos-5	Characterization of Piezoresistive and Optical Read-out Methods for Microcantilever-based Biosensor
Uchihashi, T.	Tue-Pos-6	Improvements on High-Speed AFM for Dynamic Observation of Biomolecules
Muraji, Y.	Tue-Pos-7	Measuring the Interaction Forces between a Galactose-Coated Particle and a Hepatocyte from a Mouse Using Atomic Force Microscopy
Matsuura, T.	Tue-Pos-8	Nanobiotribology of RNA-Protein Complexes on Solid Surfaces
Choi, S.	Tue-Pos-9	Morphological Investigation of Entire Mouse Sperm Using Atomic Force Microscopy and Scanning Electron Microscopy
Pompeo, G.	Tue-Pos-10	AFM Characterization of Solid-supported Lipid Multilayers Deposited by Spin-coating
Structural Analysis		
Shariati, M.	Tue-Pos-11	Effect of Annealing Temperature on Properties of Al-Cu-N Thin Films Deposited by DC Magnetron Sputtering
Longo, G.	Tue-Pos-12	Application of AFM and SEM to the Study of Meteorites: Characterization of Martensite in Ordinary Chondrites.
Baek, J.	Tue-Pos-13	Effect of Surface Morphology on Ferroelectric Domain Configuration
Ho, M.-S.	Tue-Pos-14	A Dynamic Study of Single Ag Atoms on Si(111)-7×7 Surfaces
Son, J.-M.	Tue-Pos-15	Electrical Properties of Silicon Nanocrystals Embedded in a SiO_2 Layer
Ohtake, A.	Tue-Pos-16	Surface Structures of GaAs(001) under Extreme As- and Ga-rich Conditions
Semiconductors		
Yang, Y.-W.	Tue-Pos-17	Alkylation of Si(111) Surface: A Combined High Resolution XPS, NEXAFS, and AFM Study
Rezek, B.	Tue-Pos-18	Quality of Hydrogenated Diamond Surfaces Accessed by Scanning Probe Techniques
Brihuega, I.	Tue-Pos-19	Variable Temperature Scanning Tunneling Microscopy Study of Single Pb Adatom Diffusion on Si(111)-($\sqrt{3}\times\sqrt{3}$)R30º-Pb Surfaces
Choi, J.H.	Tue-Pos-20	Fabrication and Electrical Characterization of Pentacene Nanowire
Suto, S.	Tue-Pos-21	New Reconstructions of Platinum Silicide Surface
Kurokawa, S.	Tue-Pos-22	STM Observation of Rhenium Silicide Ultra Thin Films
Sagisaka, K.	Tue-Pos-23	STM Observation of Standing Waves on the Si(100) and Ge(100) Surfaces
Cricenti, A.	Tue-Pos-24	Low Temperature STM Dynamical Study of the α-Sn/Ge(111) Surface
Perkins, E.W.	Tue-Pos-25	Holmium Growth on SiC-6H(0001) Studied by STM
Metals		
Krupski, A.	Tue-Pos-26	STM Study of the Adsorption of Ag on Mo(110)
Miranda, R.	Tue-Pos-27	Interdependence of Geometric and Electronic Structure in a 2D Metal Overlayer:Ag on Cu(111)
Campbell, P.A.	Tue-Pos-28	Surface Characterisation of Shape Memory Alloy Surgical Ligators
Oxide		
Hiranaga, Y.	Tue-Pos-29	Achievement of Low Bit Error Rate in Ferroelectric Ultrahigh-density Data Storage
Sasahara, A.	Tue-Pos-30	STM Imaging of an Organometallic Compound Chemisorbed on TiO_2(110)
Magnetic System		
Dede, M.	Tue-Pos-31	Real-Time Imaging of Vortex-Antivortex Annihilation in BSCCO Single Crystals by Low Temperature Scanning Hall Probe Microscopy (LT-SHPM)
Berdunov, N.	Tue-Pos-32	Half-metallic Materials: Spin Transport on Atomic scale
Mihalache, V.	Tue-Pos-33	STM Observation of Surface Defects in Correlation with SHPM Vortex Imaging in $Bi_2Sr_2CaCu_2O_{8+y}$ Single Crystals
Catalysis & Electrochemistry		
Yoshimura, M.	Tue-Pos-34	Behavior of Ferritin Molecules by Heating Using Atomic Force and Surface Potential Microscopy
Electronic-device		
Matsumoto, T.	Tue-Pos-35	Conductance Measurement of a DNA Network in Nanoscale by Point Contact Current Imaging Atomic Force Microscopy
Electronic-device		
Yamamoto, S.	Tue-Pos-36	Electrical Conductance of Polypyrrolyl Groups in a Chemically Adsorbed Monolayers in the Lateral Direction using a Conductive AFM Technique
Ohi, A.	Tue-Pos-37	Capacitance Spectroscopy in p-n Junctions by Scanning Capacitance Microscopy
Bottom-up Process		
Hoeppener, S.	Tue-Pos-38	Fabrication of Nanodimensional Device Structures - A Bottom-up Approach by Electro-oxidative Nanolithography
Manipulation		
Lee, C.S.	Tue-Pos-39	Nano-scale Electrical Phase-Change Recording by Conductive Atomic Force Microscopy
Nanomaterials		
Yu, Y.-J.	Tue-Pos-40	High Resolution and Sensitivity Scanning Thermal Microscopy with Nanofabricated Thermal Probe
Yajima, T.	Tue-Pos-41	Conduction Properties of Single-walled Carbon Nanotube/Porphyrin Complex Measured by Point Contact Current Imaging Atomic Force Microscopy
Huang, H.J.	Tue-Pos-42	AFM and TIRFM Near-field Optical Monitoring of the Growth of Gold Nano Rods
Tsukamoto, S.	Tue-Pos-43	Theoretical Elucidation of Mechanisms of C_{60} Reversible Reactions
Narita, H.	Tue-Pos-44	Local Electronic Structure of Al Nanocluster Fabricated on Si(111) 7×7 Surface
Nicoara, N.	Tue-Pos-45	Growth of Well-Ordered Molecular Layers of PTCDA on Pb/Si(111) Surfaces: A Scanning Tunneling Microscopy Study
Ha, J.S.	Tue-Pos-46	Structuarl Studies of V_2O_5 Nanowires by UHV-STM and AFM
Nanostructuring		
Shin, M.	Tue-Pos-47	Alignment of λ-DNA Wires on Organic Monolayer Surface Patterned with AFM Lithography
O'Rourke, B.E.	Tue-Pos-48	HCl Induced Nano-dot Formation on HOPG Surface Observed with STM and AFM
	Tue-Pos-49	-- removed --
Takimoto, B.	Tue-Pos-50	Tracking of Single Molecule Diffusing on Glass Substrate Modified with Periodic Ag Nano-architecture
Wagner, Th.	Tue-Pos-51	Mixed Monolayers of CuPc and PTCDA on Cu(111)
Chang, W.S.	Tue-Pos-52	Femtosecond Laser Coupled NSOM Patterning Using Self-assembled Monolayers
Nakayama, S.	Tue-Pos-53	Quantitative Evaluation of Nanostructure of PLD Protein Films by AFM
AFM		
Clifford, C.A.	Tue-Pos-54	The Determination of AFM Cantilever Spring Constants via Dimensional Methods
Yoo, Y.K.	Tue-Pos-55	Advanced Nanoscale Metrology of Pole-Tip Recession with NC-AFM
Konishi, T.	Tue-Pos-56	Fabrication of Ferromagnetic Metal Nano Constrictions Showing Quantized Conductance under Electrochemical Potential Control
Kuramochi, H.	Tue-Pos-57	Humidity Effect on Probe Nano-Oxidation in Dynamic Force Mode
Nakamura, K.	Tue-Pos-58	Automatic Surface Transition Temperature Monitor by Scanning Probe Microscope
Braun, D.	Tue-Pos-59	Construction of an Atomic Force Microscope Combined with a Field Ion Microscope
Miyatake, Y.	Tue-Pos-60	Development of High-Magnetic Field and Low-Temperature AFM System using Piezoresistive Cantilever
Stan, R.C.	Tue-Pos-61	Electron Transfer Correlated Protein Dynamics

Kawai, S.	Tue-Pos-62	An Ultra-High Vacuum Dynamic Force Microscope for a High Resonance Frequency Cantilever
Tip preparation and Functionalization		
Dawson, P.	Tue-Pos-63	Safe Fabrication of Sharp Gold Tips Suitable for Light Emission in Scanning Tunnelling Microscopy
Pang, C.P.	Tue-Pos-64	Nanolithography Technique By Employing Multi-wall Carbon Nanotubes
Novel Techniques		
Kimura, K.	Tue-Pos-65	Designing Resonance Modes of AFM Cantilevers for the Versatile Applications to High-Sensitive Force Detectors
Hung, S.-K.	Tue-Pos-66	Post-Fitting Control Scheme for Periodic Piezo-Scanner Driving
Heinrich, A.J.	Tue-Pos-67	Cooling an STM with the Joule-Thompson Effect
Misawa, G.	Tue-Pos-68	Contact Force Measurement System with Strain Gauge
Maier, M.	Tue-Pos-69	High Resolution Structural and Chemical Information: A Combined STM, SEM and SAM Analysis of Ag Nanocrystallites on Si
Abe, M.	Tue-Pos-70	Discrimination of Atom Species Using Site-Specific Force Spectroscopy at Room Temperature
Atabak, M.	Tue-Pos-71	Investigation of Lateral Forces as a Function of Tip-Sample Distance Using Sub-Ångstrom Oscillation Amplitude AFM
Spectroscopy		
Ichimura, K.	Tue-Pos-72	STM/STS Study on $NbSe_2$ Nanotubes
Nishitani, R.	Tue-Pos-73	Alternate Current of STM for Organic Molecules Adsorbed Metal in Terms of Equivalent Circuit of STM
Kim, S.H.	Tue-Pos-74	Electronic Property of Cesium-filled Single Wall Carbon Nanotubes
Oohira, T.	Tue-Pos-75	Monitoring Conditions of Cantilever During C-AFM Spectroscopy Measurements
Oka, H.	Tue-Pos-76	Local Electronic Properties of Reconstructed bcc-Cr(001) Thin Film Surfaces Studied by STM/STS
Sakai, A.	Tue-Pos-77	Near-Field Raman Spectra of Ferroelectric Single Crystals Observed by a Cantilever with Aperture
Hida, A.	Tue-Pos-78	Nano-spectroscopic Study of Functional Materials by Photo-combined Scanning Tunneling Microscopy
Optical Phenomena		
Hosseini, H.	Tue-Pos-79	Effect of Different Pressure on the Optical Properties of AlN Thin Films Deposited by DC Magnetron Sputtering.
Takahashi, T.	Tue-Pos-80	Photovoltage Mapping on Polycrystalline Silicon Solar Cells through Potential Measurements by AFM with Piezo-resistive Cantilever
Naruse, N.	Tue-Pos-81	STM Study of Surface Photo-Voltage Decay Dynamics
Theory & Simulation		
Suzuki, R.	Tue-Pos-82	Tight-Binding Analysis of Surface Electronic Conduction Measured with Micro-Multi-Point STM Probes
Gori, P.	Tue-Pos-83	Surface Structure and Energy Bands of 1/3 ML Sn/Ge(111)
Mallet, P.	Tue-Pos-84	Confinement of Bloch Waves in a Nanostructure of YSi_2 on Si(111)
Kim, D.H.	Tue-Pos-85	Structure of Pyrrole on Ge(100)

Poster Session III - Wednesday, July 6 (Main Hall 17:45-20:00)

Bio		
Girasole, M.	Wed-Pos-1	A Novel Tapping SNOM Able to Study Biological System in Liquid
Kobayashi, M.	Wed-Pos-2	Analyzing Specific DNA Binding of Transcription Factor Proteins
Haschke, H.	Wed-Pos-3	A New Atomic Force Microscope for Biomedical and Cell Research as an Add-on to Light Microscopy
Nysten, B.	Wed-Pos-4	Photo-grafting of Acrylic and Methacrylic Acid Monomers onto Atactic Polypropylene
Cho, S.-J.	Wed-Pos-5	Sperm Cell as an in vivo Model for Biological Membrane Metamorphosis
Kato, K.	Wed-Pos-6	The Role of Actin-Binding Protein Filamin A in Cellular Stiffness and Morphology Studied by Wide-Range SPM
Sone, H.	Wed-Pos-7	Femtogram Mass Biosensor Using a Self-sensing Cantilever for Allergy Check
Taninaka, A.	Wed-Pos-8	Investigation of Biotin-Streptavidin and Biotin-Avidin Interactions Using Dynamic Force Spectroscopy
Hirata, Y.	Wed-Pos-9	Nano Mechanical Measurement of Influenza Hemagglutinin Using Dynamic Mode AFM Technique
Maruyama, K.	Wed-Pos-10	Simultaneous Electrochemical, Near-field Optical and Topographic Imaging with a Bent-Type Optical Fiber Electrode for Scanning Electrochemical/Near-field Optical/Atomic Force Microscopy (SECM/NSOM/AFM)
Beuttler, M.	Wed-Pos-11	Probing of the Proteasome-Protein Interaction with Force Spectroscopy
Shirakawabe, Y.	Wed-Pos-12	Functional Nano-Probes and NEW-SPM System for Bio-Imaging
Structural Analysis		
Hwu, E.-T.	Wed-Pos-13	Development of an Optical Pickup System for Multifunctional Scanning Probe Microscope
Moula, Md. G.	Wed-Pos-14	A Scanning Tunneling Microscopy (STM) Study of Ni_2P (0001)
Sin, L.Y.M.	Wed-Pos-15	Structural Evolution of Mixed C_{60} and C_{70} Fullerene Layers on Ag(100)
Soppera, O.	Wed-Pos-16	Polymer surface analysis by Atomic Force microscopy in Pulsed Force Mode
Matsumoto, M.	Wed-Pos-17	Structure of the Iron Silicide Film Grown by Solid Phase Epitaxy and Reactive Deposition Epitaxy
Kanazawa, K.	Wed-Pos-18	Glycine/Cu(100) Superstructures Studied By STM/STS
Semiconductors		
Naitoh, Y.	Wed-Pos-19	High Resolution AFM Imaging of Si(111)-7×7 Surface Controlling Short-Range Interaction
Matsui, T.	Wed-Pos-20	STM/STS Observation of Fe Multimers on Semiconductor Surface
Kim, H.W.	Wed-Pos-21	Geometric and Electronic Structure of Thinned GaN Nanowires: an STM Study
Fujimori, M.	Wed-Pos-22	Electrical Conduction of Ag Nanowire Fabricated on Hydrogenated Si(100) Surface
Arima, K	Wed-Pos-23	Atomic Images of H-Terminated Si(110)-(1×1) Surfaces by Wet Cleaning
Perkins, E.W.	Wed-Pos-24	Holmium Growth on Si(111) and Subsequent Overlayer Growth Studied by STM
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