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Personal Data

Date of birth : June 28th, 1974
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Education

Ph.D. in Physics, October 2003 *State University of New York at Stony Brook*, “Imaging Magnetic Domains using Resonant X-ray Scattering” Thesis advisor Chi-Chang Kao.

M.S. in Physics, May 1998, *State University of New York at Stony Brook*, “The Isolated Diphoton Cross Section in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8\text{TeV}$ ”, advisor Roderich Engelmann.

B.S. in Electrical Engineering, May 1996, *Bogazici University, Istanbul*, “Pattern Recognition using Elliptic Fourier Descriptors”, advisor Işil Bozma.

B.S. in Physics (double major), May 1996, *Bogazici University, Istanbul*, advisor Alpar Sevgen.

Employment

Permanent scientist at Nanospectroscopy, Elettra, Italy, since October 2009.

Postdoctoral researcher at Nanospectroscopy, Elettra, Italy, January 2005 - October 2009.

Postdoctoral researcher at BACH Beamline, TASC-INFN, Italy, April-December 2004.

Research Interests

Microscopy methods: applications of and developments in low-energy electron microscopy; x-ray photoemission microscopy; coherent x-ray diffraction microscopy.

Self-organization: spontaneous pattern formation on crystalline surfaces; order-disorder transitions; elastic effects on surface restructuring.

Surface magnetism: effect of low-dimensionality on magnetic properties; adsorbate-induced magnetic transitions.

Bimetallic alloys: magnetic and structural properties of ultrathin alloy films.

Publications

- 1) P. Genoni, F. Genuzio, T. O. Montes, B. Santos, A. Sala, C. Lenardi, A. Locatelli, "Magnetic patterning by electron beam assisted carbon lithography", ACS Applied Materials and Interfaces, DOI:10.1021/acsami.8b07485 (2018).
- 2) B. von Boehn, T. O. Montes, A. Locatelli, A. Sala, and R. Imbihl, "Reactive Phase Separation during Methanol Oxidation on a V-Oxide-Promoted Rh(110) Surface", J. Phys. Chem. C **122**, 10482 (2018).
- 3) T. E. Jones, R. Wyrwich, S. Böcklein, E.A. Carbonio, M.T. Greiner, A. Yu. Klyushin, W. Moritz, A. Locatelli, T. O. Montes, Niño, A. Knop-Gericke, R. Schlögl, S. Günther, J. Wintterlin, and S. Piccinin, "The Selective Species in Ethylene Epoxidation on Silver", ACS Catal. **8**, 3844 (2018).
- 4) I. Piš, S. Nappini, F. Bondino, T. O. Montes, A. Sala, A. Locatelli, E. Magnano, "Fe intercalation under graphene and hexagonal boron nitride in-plane heterostructure on Pt(111)", Carbon **134**, 274 (2018).
- 5) S. Agnoli, A. Ambrosetti, T. O. Montes, A. Sala, A. Locatelli, P. Silvestrelli, M. Cattelan, S. Eichfeld, D. Deng, J. Robinson, A. Joshua, J. Avila, C. Chen, M. Asensio, "Unravelling the Structural and Electronic Properties at the WSe₂-Graphene Interface for a Rational Design of Van der Waals Heterostructures", ACS Appl. Nano Mater. **1**, 1131 (2018).

- 6) R. Juge, S.-G. Je, D. de Souza Chaves, S. Pizzini, L.D. Buda-Prejbeanu, L. Aballe, M. Foerster, A. Locatelli, T. O. Menteş, A. Sala, F. Maccherozzi, S.S. Dhesi, S. Auffret, G. Gaudin, J. Vogel, O. Boule, “Magnetic skyrmions in confined geometries: Effect of the magnetic field and the disorder”, *Journal of Magnetism and Magnetic Materials* **455**, 3 (2018).
- 7) M. Amati, A. Barinov, V. Feyer, L. Gregoratti, M. Al-Hada, A. Locatelli, T.O. Menteş, H. Sezen, C.M. Schneider, M. Kiskinova, “Photoelectron Microscopy at Elettra: Recent Advances and Perspectives”, *J. El. Spec. Rel. Phenomena*, 224, 59-67 (2018).
- 8) S. K. Mahatha, P. Moras, P. M. Sheverdyeva, T. O. Menteş, V. Bellini, A. Locatelli, R. Flammini, K. Horn and C. Carbone, “Combined effects of vertical and lateral confinement on the magnetic properties of MnAs micro and nano-ribbons”, *J. El. Spec. Rel. Phenomena* **19**, 2 (2017).
- 9) M. Fortin-Deschenes, O. Waller, T. O. Menteş, A. Locatelli, S. Mukherjee, F. Genuzio, P. Levesque, A. Hebert, R. Martel, and O. Moutanabbir, “Synthesis of Antimonene on Germanium”, *Nano Lett.* **17**, 4970 (2017).
- 10) C. Bäumer, R. Valenta, C. Schmitz, A. Locatelli, T. O. Menteş, S. P. Rogers, A. Sala, N. Raab, Sl. Nemsak, M. Shim, C. M. Schneider, S. Menzel, R. Waser, and R. Dittmann, “Subfilamentary Networks Cause Cycle-to-Cycle Variability in Memristive Devices”, *ACS Nano* **11**, 6921 (2017).
- 11) B. von Boehn, T. O. Menteş, A. Locatelli and R. Imbihl, “Growth of Vanadium and Vanadium Oxide on a Rh(110) Surface”, *J. Phys. Chem. C* **121** (36), 19774 (2017).
- 12) S. Forti, A. Rossi, H. Büch, T. Cavallucci, F. Bisio, A. Sala, T. O. Menteş, A. Locatelli, M. Magnozzi, M. Canepa, K. Müller, S. Link, U. Starke, V. Tozzini and C. Coletti, “Electronic properties of single-layer tungsten disulfide on epitaxial graphene on silicon carbide”, *Nanoscale* **9**, 16412 (2017).
- 13) Th. Schmidt, M. Speckmann, J. I. Flege, K. Müller-Caspary, I. Heidmann, A. Kubelka-Lange, T. O. Menteş, M. Á. Niño, A. Locatelli, A. Rosenauer, J. Falta, “Mazes and meso-islands: Impact of Ag preadsorption on Ge growth on Si (111)”, *Phys. Rev. B* **94**, 235410 (2016).
- 14) M. Hesse, S. Günther, A. Locatelli, T. O. Menteş, B. Santos, R. Imbihl, “Revisiting the Origin of Low Work Function Areas in Pattern Forming Reaction Systems: Electropositive Contaminants or Subsurface Oxygen?”, *J. Phys. Chem. C* **120**, 26864 (2016).
- 15) L. B. Steren, M. Tortarolo, F. Fernandez Baldis, M. Sirena, M. Sacchi, V. H. Etgens, M. Eddrief, B. Santos, T. O. Menteş, A. Locatelli, “Combined effects of vertical and lateral confinement on the magnetic properties of MnAs micro and nano-ribbons”, *J. Appl. Phys.* **120**, 093905 (2016).
- 16) T. O. Menteş, N. Stojić, E. Vescovo, J. M. Ablett, M. A. Niño, A. Locatelli; “Vacancy-mediated fcc/bcc phase separation in Fe_{1-x}Nix ultrathin films”; *Phys. Rev. B* **94**, 085402 (2016).
- 17) D.C. Grinter, C. Muryn, A. Sala, C.-M. Yim, C.L. Pang, T. O. Menteş, A. Locatelli, and G. Thornton; “Spillover Reoxidation of Ceria Nanoparticles”; *J. Phys. Chem. C* **120**, 11037-11044 (2016).

- 18) J.I. Flege, J. Höcker, B. Kaemena, T. O. Mentese, A. Sala, A. Locatelli, S. Gangopadhyay, J.T. Sadowski, S.D. Senanayake and J. Falta; “Growth and Characterization of Epitaxially Stabilized Ceria(001) Nanostructures on Ru(0001)”; *Nanoscale* **8**, 10849-10856 (2016).
- 19) B. Canals, I.A. Chioar, V.-D. Nguyen, M. Hehn, D.Lacour, F. Montaigne, A. Locatelli, T. O. Mentese, B. Santos Burgos and N. Rougemaille; “Fragmentation of magnetism in artificial kagome dipolar spin ice”; *Nat. Comm.* **7**, 11446 (2016).
- 20) C. Africh, C. Cepek, L.L. Patera, G. Zamborlini, P. Genoni, T. O. Mentese, A. Sala, A. Locatelli and G.Comelli; “Switchable graphene-substrate coupling through formation/dissolution of an intercalated Ni-carbide layer”; *Scientific Reports* **6**, 19734 (2016).
- 21) O. Boulle, J. Vogel, H. Yang, S. Pizzini, D. de Souza Chaves, A. Locatelli, T. O. Mentese, A. Sala, L.D. Buda-Prejbeanu, O.Klein, M. Belmeguenai, Y. Roussign, A. Stashkevich, S.M.Chrif, L. Aballe, M. Foerster, M. Chshiev, S. Auffret, I.M. Miron and G. Gaudin; “Room-temperature chiral magnetic skyrmions in ultrathin magnetic nanostructures”; *Nat. Nanotech.* **11**, 449454 (2016).
- 22) S. Nappini, I. Piš, T. O. Mentese, A. Sala, M. Cattelan, S. Agnoli, F. Bondino and E. Magnano; “Formation of a Quasi-Free-Standing Single Layer of Graphene and Hexagonal Boron Nitride on Pt(111) by a Single Molecular Precursor”; *Adv. Funct. Mater.* **26**, 1120 (2016).
- 23) J. Höcker, T. O. Mentese, A. Sala, A. Locatelli, Th. Schmidt, J. Falta, S.D. Senanayake and J.I. Flege, “Unraveling the Dynamic Nanoscale Reducibility (Ce⁴⁺ / Ce³⁺) of CeOxRu in Hydrogen Activation”, *Adv. Mater. Interfaces* **2**, 1500314 (2015).
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- 25) W. Jin, P.-C. Yeh, N. Zaki, D. Chenet, G. Arefe, Y. Hao, A. Sala, T. O. Mentese, J.I. Dadap, A. Locatelli, J. Hone, and R.M. Osgood, Jr., “Tuning the electronic structure of monolayer graphene/MoS₂ van der Waals heterostructures via interlayer twist”, *Phys. Rev. B* **92**, 201409(R) (2015).
- 26) S. Jamet, S. Da Col, N. Rougemaille, A. Wartelle, A. Locatelli, T. O. Mentese, B. Santos Burgos, R. Afid, L. Cagnon, S. Bochmann, J. Bachmann, O. Fruchart, and J. C. Tousseint, “Quantitative analysis of shadow x-ray magnetic circular dichroism photoemission electron microscopy”, *Phys. Rev. B* **92**, 144428 (2015).
- 27) M. Hesse, B. von Boehn, A. Locatelli, A. Sala, T. O. Mentese, and R. Imbihl, “Island ripening via a polymerization/depolymerization mechanism”, *Phys. Rev. Lett.* **115**, 136102 (2015).
- 28) S. Finizio, A. Kronenberg, M. Vafae, M. Foerster, K. Litzius, A. de Lucia, T. O. Mentese, L. Aballe, B. Krüger, M Jourdan, “Magnetic configurations in nanostructured Co₂MnGa thin film elements”, *New J. Phys.* **17**, 083030 (2015).
- 29) G. Zamborlini, M. Imam , L.L. Patera , T. O. Mentese, N. Stojić , C.Africh , A. Sala , N. Binggeli , G. Comelli and A.Locatelli, “Nanobubbles at GPa pressure under graphene”, *Nano Lett.* **15**, 61626169 (2015).

- 30) T. O. Menteş, A. Sala, A. Locatelli, E. Vescovo, J. M. Ablett, M. A. Niño, "Phase Coexistence in Two-Dimensional Fe_{0.70}Ni_{0.30} Films on W(110)", *e-Journal of Surface Science and Nanotechnology* **13**, 256-260 (2015).
- 31) A. Wartelle, C. Thirion, R. Afid, S. Jamet, S. Da Col, L. Cagnon, J. Toussaint, J. Bachmann, S. Bochmann, A. Locatelli, T. O. Menteş, O. Fruchart, "Magnetic field-induced domain wall motion in cylindrical nanowires", 2015 IEEE International Magnetics Conference, INTERMAG 2015, art. number 7157562, 1 (2015).
- 32) A. Wartelle, C. Thirion, R. Afid, S. Jamet, S. Da Col, L. Cagnon, J. Toussaint, J. Bachmann, S. Bochmann, A. Locatelli, T. O. Menteş, O. Fruchart, "Broadband setup for magnetic field-induced domain wall motion in cylindrical nanowires", *Magnetics, IEEE Transactions on*, **51** (11), 4300403 (2015).
- 33) F. Wang, G. Liu, S. Rothwell, M. Nevius, C. Mathieu, N. Barrett, A. Sala, T. O. Menteş, A. Locatelli, P.I. Cohen, L.C. Feldman, E.H. Conrad, "Pattern induced ordering of semiconducting graphene ribbons grown from nitrogen-seeded SiC", *Carbon* **82**, 360 (2015).
- 34) I. A. Chioar, B. Canals, D. Lacour, M. Hehn, B. Santos Burgos, T. O. Menteş, A. Locatelli, F. Montaigne, and N. Rougemaille, "Kinetic pathways to the magnetic charge crystal in artificial dipolar spin ice", *Phys. Rev. B* **90**, 220407(R) (2014).
- 35) J. E. Rault, T. O. Menteş, A. Locatelli, N. Barrett, "Reversible switching of in-plane polarized ferroelectric domains in BaTiO₃ with very low energy electrons", *Scientific Reports* **4**, 6792 (2014).
- 36) T. O. Menteş, G. Zamborlini, A. Sala, A. Locatelli, "Cathode lens spectromicroscopy: methodology and applications", *Beilstein J. Nanotechnol.* **5**, 1873 (2014).
- 37) L. Omiciuolo, E. Hernandez, E. Miniussi, F. Orlando, P. Lacovig, S. Lizzit, T. O. Menteş, A. Locatelli, R. Larciprete, M. Bianchi, S. Ulstrup, P. Hofmann, D. Alfe, and A. Baraldi, "Bottom-up approach for the low-cost synthesis of graphene-alumina nanosheet interfaces using bimetallic alloys", *Nature Communications* **5**, 5062 (2014).
- 38) M. S. Nevius, F. Wang, C. Mathieu, N. Barrett, A. Sala, T. O. Menteş, A. Locatelli, and E. H. Conrad, "The Bottom-up Growth of Edge Specific Graphene Nanoribbons", *Nano Lett.* **14**, 6080 (2014).
- 39) D.C. Grinter, C. Muryn, B. Santos, B.-J. Shaw, T. O. Menteş, A. Locatelli, and G. Thornton, "Spectromicroscopy of a Model WaterGas Shift Catalyst: Gold Nanoparticles Supported on Ceria", *J. Phys. Chem. C* **118**, 19194 (2014).
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- 41) K.L. Man, A. Pavlovska, E. Bauer, A. Locatelli, T. O. Menteş, Niño, G. Wong, I. Sou, M.S. Altman, "Growth, Reaction and Nanowire Formation of Fe on the ZnS(100) Surface", *J. Phys.: Condens. Matter* **26**, 315006 (2014).

- 42) S. Günther, T. O. Menteş, Niño, A. Locatelli, S. Böcklein, and J. Winterlin, "Desorption kinetics from a surface derived from direct imaging of the adsorbate layer", *Nat. Comm.* **5**, 3853 (2014).
- 43) S. Da Col, S. Jamet, N. Rougemaille, A. Locatelli, T. O. Menteş, B. Santos Burgos, R. Afid, M. Darques, L. Cagnon, J. C. Toussaint, and O. Fruchart, "Observation of Bloch-point domain walls in cylindrical magnetic nanowires", *Phys. Rev. B* **89**, 180405(R) (2014).
- 44) P. Moras, T. O. Menteş, P. Sheverdyaeva, A. Locatelli, C. Carbone, "Coexistence of multiple silicene phases in silicon grown on Ag(111)", *J. Phys.: Condensed Matter* **26**, 185001 (2014).
- 45) A. Locatelli, G. Zamborlini, T. O. Menteş, "Growth of single and multi-layer graphene on Ir(100)", *Carbon* **74**, 237 (2014).
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- 48) D. Alfe, M. Pozzo, E. Miniussi, S. Günther, P. Lacovig, S. Lizzit, R. Larciprete, B. Santos Burgos, T. O. Menteş, A. Locatelli, A. Baraldi, "Fine tuning graphene-metal adhesion by surface alloying", *Sci. Rep.* **3**, 2430 (2013).
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Oral Presentations

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“Adsorbate effects in ultrathin film magnetism”, 13th Nanoscience and Nanotechnology Conference (NanoTR-13), Antalya, Turkey, October 22-25, 2017 (invited).

“Phase Separation in FeNi thin films on W(110)”, Krakow, Poland, May 7, 2017.

“Beam-induced CO dissociation for magnetic patterning in ultrathin Co films”, Hi-resolution Spectroscopy for Applied Research (Hi-SPEAR), Paris, France, January 19-20, 2016.

“Structure and phase separation in ultrathin bimetallic alloys”, The European Conference on Surface Crystallography and Dynamics (ECSCD-12), Trieste, Italy, October 18-21, 2015 (invited).

“Low-dimensional bimetallic alloys: structure and magnetism at the nanoscale”, The 7th International Symposium on Surface Science (ISSS-7), Matsue, Shimane, Japan, November 2-6, 2014 (invited).

“Graphene under the eyepiece: Spectromicroscopy studies on epitaxial and exfoliated graphene @ Elettra”, New Challenges for Research on Graphene (REGINA), Trieste, December 3-4, 2013.

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“Imaging Magnetic Domains Using Resonant Scattering and Soft X-ray Speckles”, Annual APS March Meeting 2003, Austin TX.

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