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DISSERTATION

Phase Transitions in Liquid Crystal + Aerosil Gels: PhD Thesis.

Thesis written under the direction of Prof. Robert J. Birgeneau

AWARDS & HONORS

Physical Review Series Article Referee (PRL, PRB, PRE, PRM, PRX) 2016 -
NCNR, NIST, Proposal Referee 2015 - 2018
TUBITAK, Research Grant Referee 2015 -
Bidep 2232 Tübitak Fellowship November 2014 – December 2016
University of Toronto Graduate Student Fellowship January 2002 – November 2006
National High Magnetic Field Lab. Tallahassee Fellowship June 1999-December 2001
Florida State University Graduate Student Fellowship January 1999- June 1999
Hacettepe University Graduate School Fellowship September 1996-December 1998
Highest Honor Graduate, Physics Eng. Hacettepe Univ.
1st in Class 96 September 1992-June1996

PUBLICATIONS

Magnetic Order and Competition With Superconductivity in (Ho-Er)Ni₂B₂C, S. Gundogdu,
J. P. Clancy, G. Xu, Y. Zhao, P. A. Dube, T.C. Karalar, B. Ki Cho, J. W. Lynn, **M.
Ramazanoglu**, (MRX 2020: <https://iopscience.iop.org/article/10.1088/2053-1591/abc998>)

Bulk-boundary correspondence in soft matter, **M. Ramazanoglu** , S. Ozonder, R. Salci,
(PRE, 100, 020702 (R) (2019))

A New Probe: AFM Measurements for Random Disorder Systems, R. Salci, D.A. Acar,
O.Oztirpan, **M. Ramazanoglu**, (Chin. Phys. Lett. 2019, Vol. 36 Issue (1): 010501)

Suppression of antiferromagnetic spin fluctuations in superconducting Cr_{0.8}Ru_{0.2}, M. Ramazanoglu, B. G. Ueland, D. K. Pratt, L. Harriger, J. W. Lynn, G. Ehlers, G. Granroth, S. L. Bud'ko, P. C. Canfield, D. Schlager, A. I. Goldman, T. A. Lograsso, and R. J. McQueeney (Physical Review B 98, 134512, (2018))

Heisenberg model analysis on inelastic powder neutron scattering data using parent and K doped BaMn₂As₂ samples, M. Ramazanoglu, A. Sapkota, J. Lamsal, A. Pandey, D. Abernathy, J. Niedziela, M. Stone, R. Salci, D.A. Acar, F.O. Oztirpan, S. Ozonder, A. Kreyssig, A. I. Goldman, D. Johnston and R. J. McQueeney (Physica B, Vol. 551, 2018, 51-59)

Robust Antiferromagnetic Spin-Waves Across the Metal-Insulator Transition in the hole doped BaMn₂As₂, M. Ramazanoglu, A. Sapkota, J. Lamsal, A. Pandey, D. Abernathy, J. Niedziela, M. Stone, A. Kreyssig, A. I. Goldman, D. Johnston and R. J. McQueeney (PRB 95,224401 (2017))

Quantum phase transitions and decoupling of magnetic sublattices in the quasi-two-dimensional Ising magnet Co₃V₂O₈ in a transverse magnetic field, K. Fritsch, G. Ehlers, K. C. Rule, K. Habicht, M. Ramazanoglu, H. A. Dabkowska, and B. D. Gaulin, (PRB 92, 184180 (R), 2015)

Lattice distortion and stripe-like antiferromagnetic order in Ca₁₀(Pt₃As₈)(Fe₂As₂)₅, A. Sapkota, G. S. Tucker, M. Ramazanoglu, W. Tian, N. Ni, R. J. Cava, R. J. McQueeney, A. I. Goldman, and A. Kreyssig (PRB 90, 100504(R) 2014)

Connection between charge-density-wave order and charge transport in the cuprate superconductors, W. Tabis, Y. Li, M. Le Tacon, L Braicovich, A. Kreyssig, M. Minola, G. Dellea, E. Weschke, M. J. Veit, M. Ramazanoglu, A. I. Goldman, T. Schmitt, G. Ghiringhelli, N. Barišić, M. K. Chan, C. J. Dorow, G. Yu, X. Zhao, B. Keimer and M. Greven, (Nature Communications 5, Article number:5875, 2014)

Magnetic excitations and anomalous spin wave broadening in multiferroic FeV₂O₄, Q. Zhang, M. Ramazanoglu, S. Chi, D. Vaknin PRB, 89, 224416, 2014

Small-angle neutron scattering and magnetization study of HoNi₂B₂C, M. Ramazanoglu, M. Laver, A. Yagmurcu, E.-M. Choi, S.-I. Lee, A. Knigavko, B.D. Gaulin, (Fizika Nizkikh Temperatur, Low Temperature Physics, FNT, Vol. 40, N 2, 2014)

The Cover of Nature Materials August 2013 Edition, calculation for the shown L=0 layer of the Gd-Cd Magnetic Quasicrystal by Mehmet Ramazanoglu

A Family of Binary Magnetic Icosahedral Quasicrystal Based on Rare Earths & Cadmium Alan I. Goldman, Tai Kong, Andreas Kreyssig, Anton Jesche, Mehmet Ramazanoglu, Kevin W. Dennis, Sergey L. Bud'ko & Paul C. Canfield, (Nature Materials 12, 714–718, (2013))

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Two-dimensional magnetic interactions in LaFeAsO, **M. Ramazanoglu**, J. Lamsal, G. S. Tucker, J.-Q. Yan, S. Calder, T. Guidi, T. Perring, R. W. McCallum, T. A. Lograsso, A. Kreyssig, A. I. Goldman, and R. J. McQueeney (*Rapid Communication*) (PRB **87**, 140509, (2013))

Na₁₃Au₁₂Ga₁₅: The First Quasicrystal Containing Active Metal Sodium, V.Smetana, Q. Lin, D.K. Pratt, A. Kreyssig, **M. Ramazanoglu**, J. D. Corbett, A.I. Goldman, Gu J. Miller, (*Angewandte Chemie*, 51, 12699-12702, 2012 and the Back Cover of December, 2012 Issue)

Magnetic Order and Fluctuations in the Presence of Quenched Disorder in the Kagome Staircase System (Co_(1-x)Mg_x)₃V₂O₈, K.Fritsch, Z. Yamani, S. Chang, Y. Qui, J.R.D. Copley, **M. Ramazanaoglu**, H.A. Dabkowska, B.D. Gaulin, (PRB **86**, 174421 (2012))

Local ferromagnetism in single-crystalline multiferroic BiFeO₃, **M. Ramazanoglu**, M. Laver, W. Ratcliff, S.M. Watson, W.C. Chen, A. Jackson, K. Kothapalli, Seongsu Lee, S.-W. Cheong, V. Kiryukhin (PRL **107**, 207206, 2011)

Giant effect of uniaxial pressure on magnetic domain populations in multiferroic bismuth ferrite, **M. Ramazanoglu**, W. Ratcliff, H.T. Yi, A. Sirenko, S.-W. Cheong, V. Kiryukhin (PRL **107**, 067203, 2011)

Mechanism of exchange striction of ferroelectricity in multiferroic orthorhombic HoMnO₃ single crystals, Y.J. Choi, N.Lee, Y.J. Choi, **M. Ramazanoglu**, W. Ratcliff II, V. Kiryukhin, S-W. Cheong (PRB **84**, 020101(R), 2011, Editors Suggestion)

Temperature-dependent properties of the magnetic order in single-crystal BiFeO₃, **M. Ramazanoglu**, V. Kiryukhin, S-W. Cheong (PRB **83**, 174434, 2011)

Smectic-A and smectic-C Phases and Phase Transitions in $\bar{8}S5$ Liquid Crystal-Aerosil Gels B. Freelon, **M. Ramazanoglu**, P.J. Chung, R.N. Page, P. Valdivia, C.W. Garland and R.J. Birgeneau (PRE **84**, 031705, 2011)

Coupling between magnon and ligand-field excitations in magnetoelectric Tb₃Fe₅O₁₂ garnet, T. D. Kang, E. Standard, K. H. Ahn, and A. A. Sirenko, G. L. Carr, S. Park, Y. J. Choi, **M. Ramazanoglu**, V. Kiryukhin, and S-W. Cheong (PRB **82**, 014414, 2010)

Specific heat of quantum spin ice compound Tb₂Ti₂O₇ in magnetic fields at low temperatures, R. Higashinaka, T. Tayama, **M. Ramazanoglu**, H.A. Dabkowska, T. Sakakibara, B.D. Gaulin, and H. Takagi, (*The Conference of Physical Society of Japan* **64** (2-3), 362, 2009 ; **63**, (2-3), 433, 2009 and **64**, (1-3), 518, 2009)

Crystal growth and characterization of magnetically diluted Kagome staircase system, ; (Co_{1-x}Mg_x)₃V₂O₈, K. Fritsch, **M. Ramazanoglu**, H. Dabkowska, and B.D. Gaulin (*Journal of Crystal Growth* **327** (2011), pp. 205-208)

Magnetic Anisotropy in Geometrically Frustrated Kagome Staircase Lattice, R.Szymczak, P. Aleshkevych, C.P. Adams, S.N. Barilo, A.J. Berlinsky, J.P. Clancy, V. Domuchowski, J.Fink-Finowicki, B.D. Gaulin, **M. Ramazanoglu**, S.V. Shiryayev, Z. Yamani, H. Szymczak, Journal of Magnetism and Magnetic Materials (Journal of Magnetism and Magnetic Materials, v321, n7, p793-5, 2009)

Spin Waves in the Ferromagnetic Kagomé Staircase System $\text{Co}_3\text{V}_2\text{O}_8$, **M. Ramazanoglu**, C.P. Adams, J.P. Clancy, A.J. Berlinsky, Z. Yamani, R. Szymczak, H. Szymczak, J. Fink-Finowicki, B.D. Gaulin, (PRB 79, 024417 (2009))

Spin Waves and Quantum Criticality in the Frustrated XY Pyrochlore Magnet $\text{Er}_2\text{Ti}_2\text{O}_7$, J.P.C. Ruff, J.P. Clancy, A. Bourque, M.A. White, **M. Ramazanoglu**, J.S. Gardner, Y. Qiu, J.R.D. Copley, H.A. Dabkowska, and B.D. Gaulin, (Phys. Rev. Lett. 101, 147205 (2008))

High-resolution x-ray study of nematic–smectic- A and smectic- A –reentrant-nematic transitions in liquid-crystal–aerosil gels, **M. Ramazanoglu**, S. Larochelle, C. W. Garland, and R. J. Birgeneau, (Phys. Rev. E 77, 031702 (2008))

High-resolution x-ray scattering study of the effect of quenched random disorder on the nematic–smectic- A transition, **M. Ramazanoglu**, S. Larochelle, C. W. Garland, and R. J. Birgeneau, (Phys. Rev. E 75, 061705 (2007))

Effects of disorder on a Smectic A-Nematic phase transition, S. Larochelle, **M. Ramazanoglu**, R.J. Birgeneau, (Phys. Rev. E 73, 060702 (2006))

Neutron scattering and magnetization studies of $\text{Ba}_2\text{Cu}_{2.95}\text{Co}_{0.05}\text{O}_4\text{Cl}_2$: A decorated two-dimensional antiferromagnet, **M.K. Ramazanoglu**, P.S. Clegg, S. Wakimoto, R.J. Birgeneau, S. Noro, (Phys. Rev. B 73, 054418 (2006))

First-order isotropic–smectic- A transition in liquid-crystal–aerosil gels, **M. K. Ramazanoglu**, P. S. Clegg, R. J. Birgeneau, C. W. Garland, M. E. Neubert, and J. M. Kim (Phys. Rev. E 69, 061706 (2004))

Systematic study of grain boundary grooving on textured Ni substrates for HTS and LTS conductors, Okuyucu, H., **Ramazanoglu, M.**, Akin, Y., Alp, T., Sigmund, W.; Crow, J.E., Hascicek, Y.S. , (AIP Conference Proceedings, n 614B, 2002, p 557-63)

Textured buffer layers for YBCO coated conductors by continuous sol-gel processing Okuyucu, H., Celik, E., **Ramazanoglu, M.K.**, Akin, Y., Mutlu, I.H., Sigmund, W., Crow, J.E., Hascicek, Y.S., (IEEE Transactions on Applied Superconductivity, v 11, n 1, pt.3, March 2001, p 2889-92)

Non-vacuum YBCO films on buffer layered Ni tapes: processing, growth and properties Mutlu, I.H., Celik, E.; **Ramazanoglu, M.K.**; Akin, Y.; Hascicek, Y.S. ,(IEEE Transactions on Applied Superconductivity, v 10, n 1, March 2000, p 1154-7)