

Tomče Runčevski, Ph.D.

Assistant Professor
Department of Chemistry
Southern Methodist University

Fondren Science Building – 141
3215 Daniel Avenue
Dallas, TX 75275

Cell: 510 708 2455
Email: truncevski@smu.edu
Web: <https://runcevskilab.org>

Professional Appointments

Assistant Professor	Southern Methodist University, Dept. of Chemistry	2018 – current
Postdoc	University of California at Berkeley (advisor Jeffrey R. Long)	2015 – 2018
Postdoc	Max Planck Institute (advisor Robert E. Dinnebier)	2014 – 2015
R&D Consultant	BASF The Chemical Company	2013 – 2015

Education

PhD	Max Planck Institute for Solid State Research, (advisor Robert E. Dinnebier) Materials Science, Structural Chemistry and Crystallography	2011 – 2014
BS and MS	Ss. Cyril and Methodius University of Skopje Applied Chemistry	2006 – 2011

Awards and Honors

Otto Hahn Medal, Max Planck Society	2015
Nominee for the Rampacher Award, Max Planck Institute	2014
<i>Summa cum laude</i> for PhD	2014
PhD Fellowship, International Max Planck Research School	2011
Golden Medal, Ss. Cyril and Methodius University of Skopje	2011
<i>Summa cum laude</i> for both BS and MS	2011
Scholarship, German Academic Exchange Service	2010

Awards from Large Scale Facilities

Argonne National Laboratory, APS; Lawrence Berkeley National Laboratory, ALS; Brookhaven National Laboratory, NSLS; National Institute for Standards and Testing; DESY; ANKA; SLS; ERSF; Diamond.

Professional Societies

American Chemical Society (since 2014)
International Center for Diffraction Data (since 2019)

Reviewer

Nature Commun.; ACS Central Sci.; J. Am. Chem. Soc.; Angew. Chem. Int. Ed.; J. Am. Cer. Soc.; Crystal Growth & Design; Crystal Eng. Commun.; J. Raman Spectros.; Curr. Org. Chem.; Powder Diffraction; Zeit. Anorg. Allge. Chem.; Mac. J. Chem. Chem. Eng.; Heliyon; Heritage; Swiss National Science Foundation

Recent Invited Talks

University of Barcelona	2019
University of Texas at San Antonio	2019
MS&T18 Congress, Columbus, OH, American Ceramic Society, Keynote Speaker	2018
New University of Lisbon	2018
SC&TM-25 Congress, Ohrid, Macedonia, Macedonian Chemical Society, Keynote Speaker	2018

Publications

(46) Taylor, M. K., Juhl, M., Hadaf, G. B., Hwang, D., Velasquez, E., Oktawiec, J., Lefton, J. B., **Runčevski, T.**, Long, J. R., Lee, J., Palladium-Catalyzed Oxidative Homocoupling of Pyrazole Boronic Esters to Access Versatile Bipyrazoles and the Flexible Metal–Organic Framework Co (4, 4'-bipyrazolate). *Chemical Communications*, 2020, just accepted.

(45) Lefton, J., Pekar, K., **Runčevski, T.**, The Crystal Structure of Zineb, 75 years later. Submitted to *Crystal Growth and Design*. preprint available at <https://doi.org/10.26434/chemrxiv.9862745.v1>

(44) **Runčevski, T.** Book review: Rietveld Refinement Practical Powder Diffraction Pattern Analysis using TOPAS. By Robert E. Dinnebier, Andreas Leineweber and John SO Evans. *Journal of Applied Crystallography*, 2019, 52, 1238-1239.

(43) Kumar, R., Vaish, A., **Runčevski, T.**, Tsarevsky, N.V., Hypervalent Iodine Compounds with Tetrazole Ligands. *Journal of Organic Chemistry*, 2018, 83, 12496-12506.

UC Berkeley (Postdoc, 07/2015 – 06/2018)

(42) C.M. McGuirk, **Runčevski, T.**, Oktawiec, J., Turkiewicz, A., Taylor, M.K., Long, J.R., Influence of Metal Substitution on the Pressure-Induced Phase Change in Flexible Zeolitic Imidazolate Frameworks. *Journal of the American Chemical Society*, 2018, 140, 15924-15933.

(41) C.M. McGuirk, Siegelman, R.L., Drisdell, W.S., **Runčevski, T.**, Milner, P.J., Oktawiec, J., Wan, L.F., Su, G.M., Jiang, H.Z.H., Reed, D.A., Gonzalez, M.I., Prendergast, D., Long, J.R., Cooperative Adsorption of Carbon Disulfide in Diamine-Appended Metal–Organic Frameworks. *Nature Communications*, 2018, 9, 5133.

(40) Kapelewski, M.T., **Runčevski, T.**, Tarver, J.D., Jiang, H.Z.H., Hurst, K.E., Ayala, A., Gennett, T., FitzGerald, S.A., Brown, C.A., Long, J.R., Evaluating Metal-Organic Frameworks for High-Pressure H₂ Storage: Record High Volumetric H₂ Capacity in Ni₂(m-dobdc). *Chemistry of Materials*, 2018, 30, 8179-8189.

(39) Kapelewski, M.T., Oktawiec, J., **Runčevski, T.**, Gonzalez, M.I., Tarver, J.D., Long, J.R., Separation of Xenon and Krypton in the Metal–Organic Frameworks M₂(m-dobdc) (M = Co, Ni). *Israel Journal of Chemistry*, 2018, 58, 1138-1143.

(38) Taylor, M.K., **Runčevski, T.**, Oktawiec, J., Bachman, J.E., Siegelman, R.L., Jiang, H.Z.H., Mason, J.A., Tarver, J.D., Long, J. R., Near-Perfect CO₂/CH₄ Selectivity Achieved through Reversible Guest Templating in the Flexible Metal–Organic Framework Co(bdp). *Journal of the American Chemical Society*, 2018, 140, 10324-10331.

(37) Reed, D.A., Keitz, B.K., Oktawiec, J., Mason, J.A., **Runčevski, T.**, Xiao, D.J., Darago, L.E., Crocellà, V., Bordiga, S., Long, J.R., Cooperative Spin Transitions for Efficient Carbon Monoxide Separations in Metal-Organic Frameworks Featuring Open Metal Sites. *Nature*, 2017, 550, 96-103.

(36) Martell, J.D., Porter-Zasada, L.B., Forse, A.C., Siegelman, R.L., Gonzalez, M.I., Oktawiec, J., **Runčevski, T.**, Xu, J., Srebro-Hooper, M., Milner, P.J., Colwell, K.A., Autschbach, J., Reimer, J.A., Long, J.R., Enantioselective Recognition of Ammonium Carbamates in a Chiral Metal–Organic Framework. *Journal of the American Chemical Society*, 2017, 139, 16000-16012.

(35) Milner, P.J., Siegelman, R.L., Forse, A.C., Gonzalez, M.I., **Runčevski, T.**, Martell, J.D., Reimer, J.A., Long, J.R., A Propylenediamine-Appended Metal–Organic Framework with a Mixed CO₂ Adsorption Mechanism Enables Efficient Carbon Dioxide Capture from Coal Flue Gas. *Journal of the American Chemical Society*, 2017, 139, 13541-13553.

(34) Levine, D.J., Gonzalez, M.I., Legendre, C.M., **Runčevski, T.**, Oktawiec, J., Colwell, K.A., Long, J.R., Calcium Coordination Solids for pH-Triggered Release of Olsalazine. *ChemMedChem*, 2017, 12, 1739-1742.

(33) **Runčevski, T.**, Kapelewski, M.T., Torres-Gavosto, R.M., Tarver, J.D., Brown, C.M., Long, J.R., Adsorption of two Hydrogen Molecules at a Single Metal Site in a Metal-Organic Framework. *Chemical Communications*, 2016, 52, 8251-8254.

(32) Taylor, M.K., **Runčevski, T.**, Oktawiec, J., Gonzalez, M.I., Siegelman, R.L., Mason, J.A., Ye, J., Wiers, B.M., Brown, C.M., Long, J.R., Tuning the CH₄-Induced Phase Transition of The Flexible Metal-Organic Framework Co(bdp). *Journal of the American Chemical Society*, 2016, 138, 15019-15026.

(31) Levine, D.J., **Runčevski, T.**, Kapelewski, M.T., Keitz, B.K., Oktawiec, J., Reed, D.A., Mason, J.A., Jiang, H.Z.H., Colwell, K.E., Legendre, C.M., FitzGerald, S.A., Long, J.R., Olsalazine-Based Metal-Organic Frameworks as Biocompatible Platforms for H₂ Adsorption and Drug Delivery. *Journal of the American Chemical Society*, 2016, 138, 10143-10150.

Max Planck Institute (Graduate, 11/2011 – 07/2014, and postdoc, 08/2014 – 06/2015)

(30) Knöller, A., Kilper, S., Diem, A.M., **Runčevski, T.**, Dinnebier, R.E., Burghard, Z., Bill, J., Ceramic Cushioning – Making Brittle Materials Resilient. *Nano Letters*, 2018, 18, 2519-2524.

(29) Fisher, A., Eggert, G., Dinnebier, R.E., **Runčevski, T.**, When Glass and Metal Corrode Together, V: Sodium Copper Formate. *Studies in Conservation*, 2018, 1, 1-14.

(28) Dinnebier, R.E., Etter, M., **Runčevski, T.**, Laboratory and Synchrotron Powder Diffraction in Handbook of Solid State Chemistry (Eds. Richard Dronskowski, Shinichi Kikkawa, Andreas Stein) Wiley, Weinheim, 2017.

(27) Knöller, A., **Runčevski, T.**, Dinnebier, R.E., Bill, J., Burghard, Z., Ice-Templating of V₂O₅ Nanofibres – Towards Artificial Cuttlebone with Ultrahigh Porosity. *Scientific Reports*, 2017, 7:42951.

(26) Dinnebier, R.E., **Runčevski, T.**, Hinrichsen, B., Crystal Structure of the Dietary Supplement Ferrous Glycine Sulphate. *Zeitschrift für Anorganische und Allgemeine Chemie*, 2016, 642, 306-310.

(25) Dinnebier, R.E., Fisher, A., Eggert, G., **Runčevski, T.**, Wahlberg, N., High-Resolution X-ray Powder Diffraction in Conservation Science: Crystal Structure Determination of Corrosion Products on Historic Art Objects. *Journal of Visualized Experiments*, 2016, 10.3791/54109.

(24) Panda, M.K., **Runčevski, T.**, Husain, A., Dinnebier, R.E., Naumov, P., Perpetually Self-Propelling Chiral Single Crystals. *Journal of the American Chemical Society*, 2015, 175, 1895-1902.

(23) Nath, N.K., **Runčevski, T.**, Lai, C-Y., Chiesa, M., Dinnebier, R.E., Naumov, P., Surface and Bulk Effects in Photochemical Reactions and Photomechanical Effects in Dynamic Molecular Crystals. *Journal of the American Chemical Society*, 2015, 175, 1895-1902.

(22) **Runčevski, T.**, Makreski, P., Dinnebier, R.E., Jovanovski, G., The Crystal Structure of Symplesite. *Zeitschrift für Anorganische und Allgemeine Chemie*, 2015, 641, 1207-1210.

(21) **Runčevski, T.**, Kreß, K.C., Wahlberg, N., Dinnebier, R.E., Laschat, S., Rigidified Malononitrile- and Ketone-Merocyanines in Rigid Environments. *Macedonian Journal of Chemistry and Chemical Engineering*, 2015, 34, 151.

(20) Wahlberg, N., **Runčevski, T.**, Dinnebier, R.E., Fischer, A., Eggert, G., Iversen, B.B., Crystal Structure of Thecotrichite, an Efflorescent Salt on Calcareous Objects Stored in Wooden Cabinets. *Crystal Growth & Design*, 2015, 15, 2795-2800.

(19) Dinnebier, R.E., **Runčevski, T.**, Fischer, A., Eggert, G., Solid-State Structure of a Degradation Product Frequently Observed on Historic Metal Objects. *Inorganic Chemistry*, 2015, 54, 2638-2642.

(18) Werner, J., **Runčevski, T.**, Dinnebier, R.E., Ebbinghaus, S.G., Suckert, S., Näther, C., Thiocyanato Coordination Polymers with Isomeric Coordination Networks – Synthesis, Structures, and Magnetic Properties. *European Journal of Inorganic Chemistry*, 2015, 20, 3236-3245.

(17) Hameed, S.A., Reddy, M.V., Nagarathinam, M., **Runčevski, T.**, Dinnebier, R.E., Adams, S., Chowdari, B.V.R., Vittal, J.J., Room Temperature Large-Scale Synthesis of Layered Frameworks as Low-Cost 4 V Cathode Materials for Lithium Ion Batteries. *Scientific Reports*, 2015, 5:16270.

(16) Werner, J., Suckert, S., Rams, M., Tomkowicz, Z., **Runčevski, T.**, Dinnebier, R.E., Näther, C., Thermodynamically Metastable Thiocyanato Coordination Polymer That Shows Slow Relaxations of the Magnetization. *Inorganic Chemistry*, 2015, 54, 2638-2642.

- (15) Panda, M.K., **Runčevski, T.**, Sahoo, S.C., Belik, A., Nath, N.K., Dinnebier, R.E., Naumov, P., Colossal Positive and Negative Thermal Expansion and Thermosalient Effect in a Pentamorphic Organometallic Martensite. *Nature Communications*, 2014, 5:4811.
- (14) **Runčevski, T.**, Petruševski, G., Makreski, P., Ugarkovik, S., Dinnebier, R.E., On the Hydrates of Codeine Phosphate: the Remarkable Influence of Hydrogen Bonding on the Crystal Size. *Chemical Communications*, 2014, 50, 6970-6972.
- (13) **Runčevski, T.**, Blanco-Lomas, M., Marazzi, M., Cejuela, M., Sampedro, D., Dinnebier, R.E., Following a Photoinduced Reconstructive Phase Transformation and its Influence to the Crystal Integrity: Powder Diffraction and Theoretical Study. *Angewandte Chemie International Edition*, 2014, 53, 6738-6742.
- (12) **Runčevski, T.**, Dinnebier, R.E., Freyer, D., Dehydration of the Sorel Cement Phase $3\text{Mg}(\text{OH})_2 \cdot \text{MgCl}_2 \cdot 8\text{H}_2\text{O}$ Studied by In Situ Synchrotron X-ray Powder Diffraction and Thermal Analyses. *Zeitschrift für Anorganische und Allgemeine Chemie*, 2014, 640, 100-105.
- (11) Wöhlert, S., **Runčevski, T.**, Dinnebier, R.E., Ebbinghaus, S., Näther, C., Synthesis, Structures, Polymorphism and Magnetic Properties of Transition Metal Thiocyanato Coordination Compounds. *Crystal Growth & Design*, 2014, 14, 1902-1913.
- (10) Medishetty, R., Bai, Z., Husain, A., **Runčevski, T.**, Dinnebier, R.E., Naumov, P., Vittal, J.J., Single Crystals Popping under UV Light: A Photosalient Effect Triggered by a [2+2] Cycloaddition Reaction. *Angewandte Chemie International Edition*, 2014, 53, 5907-5911.
- (9) Abdija, Z., Najdoski, M., Koleva, V., **Runčevski, T.**, Dinnebier, R.E., Šoptrajanov, B., Stefov, V., Preparation, Structural, Thermogravimetric and Spectroscopic Study of Magnesium Potassium Arsenate Hexahydrate. *Zeitschrift für Anorganische und Allgemeine Chemie*, 2014, 640, 3177-3183.
- (8) **Runčevski, T.**, Wu, C., Yu, H., Yang, B., Dinnebier, R.E., Structural Characterization of a new Magnesium Oxysulphate Hydrate Cement Phase and its Surface Reactions with Atmospheric Carbon Dioxide. *Journal of the American Ceramic Society*, 2013, 96, 3609-3616.
- (7) Wöhlert, S., **Runčevski, T.**, Dinnebier, R.E., Näther, C., Synthesis, Thermal and Magnetic Properties of New Coordination Compounds based on $\text{Mn}(\text{NCS})_2$ with 2-Chloropyrazine and 2-Methylpyrazine as neutral Co-Ligand. *Zeitschrift für Anorganische und Allgemeine Chemie*, 2013, 639, 2648-2656.
- (6) Dinnebier, R.E., **Runčevski, T.**, Sugimoto, K., Dehydration of Magnesium Bromide Hexahydrate Studied by in situ X-ray Powder Diffraction. *Zeitschrift für Anorganische und Allgemeine Chemie*, 2013, 639, 59-64.
- (5) Stefov, V., Abdija, Z., Najdoski, M., Koleva, V., Petruševski, V.M., **Runčevski, T.**, Dinnebier, R.E., Šoptrajanov, B., Infrared and Raman Spectra of Magnesium Ammonium Phosphate Hexahydrate (Struvite) and its Isomorphous Analogues. IX. Spectra of Protiated and Partially Deuterated Cubic Magnesium Caesium Phosphate Hexahydrate. *Vibrational Spectroscopy*, 2013, 68, 122-128.
- (4) **Runčevski, T.**, Dinnebier, R.E., Magdysyuk, O.V., Pöllmann, H., Crystal Structures of Calcium Hemicarboaluminate and Carbonated Calcium Hemicarboaluminate from Synchrotron Powder Diffraction Data. *Acta Crystallographica Section B: Structural Science*, 2012, 68, 493-500.
- Ss. Cyril and Methodius University (Undergraduate, 09/2006 – 08/2011)**
- (3) Makreski, P., **Runčevski, T.**, Jovanovski, G., Minerals from Macedonia XXVI. Characterization and spectra-structure correlations for grossular and uvarovite. Raman study supported by IR spectroscopy. *Journal of Raman Spectroscopy*, 2011, 42, 72-77.
- (2) Makreski, P., Jovanovski, G., **Runčevski, T.**, Jaćimović, R., Simple and Efficient Method for Detection of Rare Earth Elements in Traces by Raman Spectroscopy Instrumentation. *Macedonian Journal of Chemistry and Chemical Engineering*, 2011, 30, 241-250.
- (1) Naumov, P., Makreski, P., Petruševski, G., **Runčevski, T.**, Jovanovski, G., Visualization of a Discrete Solid-State Process with Steady-State X-ray Diffraction: Observation of Hopping of Sulfur Atoms in Single Crystals of Realgar. *Journal of the American Chemical Society*, 2010, 123, 11398-11401.