

## **Timothy C. Korinek, P.E.**

Synergy Technologies LLC  
N144 W6466 Pioneer Rd., Cedarburg, WI 53012  
Phone: 262.546.0032, Fax: 262.377.1974  
Email: [tim@synergytech.net](mailto:tim@synergytech.net)



### **AREAS OF EXPERTISE:**

Metallurgical and Materials Failure Analysis, Fracture Analysis, Corrosion Damage, Casting and Weld analysis, Analysis of mechanical systems, Materials involved in electrical fires, Research.

### **PROFESSIONAL EXPERIENCE:**

#### **Synergy Technologies LLC, Cedarburg, WI, 12/12 to present** **Materials Engineer**

Perform metallurgical / materials failure analysis.

Provide analysis and engineering opinions in cases involving litigation or insurance claims.

Lab manager, operate Scanning Electron Microscope, EDS, digital x-ray equipment, and other instruments.

Carry out experiments and research on electrical overheating.

#### **Synergy Technologies LLC, Cedarburg, WI, 12/05 to 12/12** **Engineering Technician**

Conducted investigations and authored reports for 100+ cases involving sump pump failures / water damage or well pump failure.

Performed failure analysis on a variety of systems, products and components such as appliances, electric motors, pumps, valves, circuit boards, weldments, plumbing fittings, furniture.

### **EDUCATION/CERTIFICATION/AWARDS:**

1. Professional Engineer, currently licensed in Wisconsin (45814).
2. Bachelor of Science in Materials Engineering, 2012, University of Wisconsin Milwaukee.
3. Certified Fireplace & Chimney Inspector, Fireplace Investigation Research and Educational Service (F.I.R.E. Service), April, 2013.

### **TESTIMONY EXPERIENCE (68 total)**

Depositions: 1

## **CONTINUING EDUCATION:**

1. IAAI (International Assoc. of Arson Investigators), Wisconsin Chapter 25, General Fire Investigation Seminar, Topics: Residential Electrical and Gas Fires, Semi-Tractor Trailer and Heavy Equipment Fires, Utility Theft, Statewide Info. Sharing Systems. Manitowoc, WI, Sept, 2017.
2. ISFI (International Symposium on Fire Investigation Science and Technology), NAFI, Scottsdale AZ, Sept. 12-14, 2016. Topics: Lithium Ion Batteries, Receptacle Overheating, Arc Mapping, Heating Elements, Circuit Breakers, Vehicle Fires, Case Studies, CSST, Fan Coil Units, Battery Cables, ECU Fire Science Program Development, and Energized Structures.
3. IAAI (International Assoc. of Arson Investigators), Wisconsin Chapter 25, General Fire Investigation Seminar, Topics: Preparing for Daubert Challenges, Civil Litigation Issues, Case Studies, Analytical Interviewing Techniques, Materials and their Reactions to Fire, and Photography, covers NFPA 1033 – 1.3.7 (1, 8, 10, 11, and 15). Stevens Point, WI, June, 2015.
4. IAAI (International Assoc. of Arson Investigators), Wisconsin Chapter 25, General Fire Investigation Seminar, Topics: Ignitable liquid chemistry, vertical ventilation in fires, electrical ignition sources, explosions, October 2014.
5. NASP Subro College 200 Training Session, Topics Include: Investigation, expert reports, to litigation, to settlement, Marshfield, WI, Sept. 25, 2014.
6. IAAI (International Assoc. of Arson Investigators), Wisconsin Chapter 25, General Fire Investigation Seminar, Topics: Preparing for Daubert Challenges, Civil Litigation Issues, Case Studies, Analytical Interviewing Techniques, Materials and their Reactions to Fire, and Photography, covers NFPA 1033 – 1.3.7 (1, 8, 10, 11, and 15). Stevens Point, WI, June, 2015.
7. IAAI (International Assoc. of Arson Investigators), Wisconsin Chapter 25, General Fire Investigation Seminar, Topics: Smoke detectors. Ignitable liquid research, evidence collection, forensic examination of fire debris. Vertical ventilation research study, and investigative programs for I pads and tablets, covers NFPA 1033 – 1.3.7 (2, 3, 5, 6, 8, 9, 10, 11, 13, 14, 15, 16). Green Bay, WI, Sept/Oct, 2014.
8. IAAI (International Assoc. of Arson Investigators), Expert Witness and Courtroom Testimony course, Manitowoc, WI, February, 2014.
9. IAAI Wisconsin Chapter 25, General Fire Investigation Seminar, Topics: Wildland Fire Investigation, NFPA 1033, Qualifications, Vehicle Fire Investigation, Arc Mapping, and Fuel/air Explosions, Brookfield, WI, November, 2013.
10. Dane County Arson Response Initiative (DCARI), September 21, 2013, Elevated Fires, Steve Carman.
11. Fireplace, Chimney, and Vent Inspection Seminar, F.I.R.E. Service, Moorpark CA, September 2013. Dale Feb, instructor. 48 hours, tested. Topics: Fireplace, chimney, and vent construction, inspection, NFPA 211, International Residential Building Code, failure modes, hands-on testing. Result of seminar was Certification as Fireplace Inspector.
12. Fire and Materials Conference, Interscience Communications, San Francisco, CA, January 2013.

13. Roofing Inspection Course, Fox Valley Technical College, Instructor: Joe Sprangers, May 10, 2010.
14. General Fire Investigation Seminars, IAAI, WI: June, 2009. Topics included Safety at the Fire Scene and Arc Mapping.
15. General Fire Investigation Seminars, IAAI, WI: June, 2008, Topics included: Large Loss Fires, Kitchen fires, and case studies.
16. Vehicle Fire Investigation Seminar, IAAI, Nov. 2006, Sun Prairie, WI, Topics included: Vehicle fires investigation seminar, hands-on investigation of one (pre-burnt) vehicle per group, verbal report for each group given to seminar attendees.

### **SPEAKING ENGAGEMENTS:**

1. Fire and Materials Conference, Interscience Communications, San Francisco, CA, January 2013. Presented research findings on high resistance electrical connections

### **PUBLICATIONS:**

1. "Pre and Post-Flashover Characteristics of an Electrically Heated Poor Connection between Copper and Steel". Fire and Materials Conference Proceedings, Interscience Communications, San Francisco, CA, January 2013.

### **PROFESSIONAL AFFILIATIONS:**

1. National Fire Protection Association, NFPA, 2014.
2. ASM International (formerly the American Society for Metals), 2009.
3. International Association of Arson Investigators, IAAI, Wisconsin Member, 2006.