

# Symposium on Functional Materials Science and Engineering (SFME 2025)

## PROGRAM

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| 08:30-09:00  |             | Registration  |
| 09:00-09:15  |             | Opening Ceremony  |
| 09:15-09:20  |             | Prof. Dr. Ömer ARIÖZ<br>Rector, Toros University  |
| 09:20-09:25  |             | Prof. Dr. Adnan MAZMANOĞLU<br>Dean of Engineering Faculty, Toros University   |
| Session I-Invited Speakers   |             |   |
| I1   | 09:30-10:00 | Nanoparticle-Engineered Catalysts for Clean Hydrogen Prodcution: Innovations and Future Perspectives<br>Doğan Kaya<br>Department of Physics, Faculty of Sciences and Letters, Çukurova University, Adana, Türkiye   |
| I2   | 10:00-10:30 | Advancing Solar Frontiers:Graphene Integrated CTS Thin Film Solar Cells<br>Recep Zan<br>TÜBA-Üstün Başarılı Genç Bilim İnsanı<br>Department of Physics, Faculty of Sciences, Niğde Ömer Halisdemir University, Niğde, Türkiye   |
| S  | 10:30-10:35 | Special thanks to Akyürek Technology and OSF Logistics  |
| Coffee Break and Poster Session<br>(10:35-11:00)                                       |             |   |
| P1   | 10:30-11:00 | Bi2Sr2Ca1-xSbxCu1.75Na0.25Oy (x = 0.0, 0.0125, 0.0250, 0.050, 0.075, 0.1) Investigation of Phase Formation of Superconductors<br>Meryem Ebru Kır, M. Ersin Aytekin<br>Department of Computer Engineering, Faculty of Engineering, Tarsus University, Tarsus, Türkiye  |
| P2   |             | Processing and characterization of sustainable flax-jute/PA11 thermoplastic composites<br>Melisa Yeke<br>Telateks Tekstil Ürünleri Sanayi ve Ticaret A.Ş. METYX Composites, Manisa, Türkiye   |
| P3   |             | Luminescence Characterization of SrSiO3: Ce, Li dosimetry pellets synthesized by solid state technique<br>Ahmad Mesto <sup>1</sup> , Volkan Altunal <sup>1</sup> , Veysi Güçkan <sup>1</sup> , Bilal Isik <sup>1</sup> , Ahmet Ekicibil <sup>1</sup> , Zehra Yegingil <sup>2</sup><br><sup>1</sup> Department of Physics, Faculty of Science and Letters, Çukurova University, Adana, Türkiye<br><sup>2</sup> Toros University, Engineering Faculty, Electrical and Electronic Engineering Department, Mersin, Türkiye  |
| P4   |             | Kinetic Analysis of K2SO4: Dy, Na TL phosphors<br>Bilal Isik <sup>1</sup> , Volkan Altunal <sup>1</sup> , Veysi Guckan <sup>1</sup> , Ahmad Mesto <sup>1</sup> , Adnan Ozdemir <sup>2</sup> , Ahmet Ekicibil <sup>1</sup> , Zehra Yegingil <sup>3</sup><br><sup>1</sup> Department of Physics, Faculty of Sciences and Letters, Çukurova University, Adana, Türkiye<br><sup>2</sup> Department of Optician, Elbistan Vocational High School of Health Service, Kahramanmaraş İstiklal University, Kahramanmaraş, Türkiye<br><sup>3</sup> Toros University, Engineering Faculty, Electrical and Electronic Engineering Department, Mersin, Türkiye |
| Session II-Plenary Speakers<br>Chair, Assist. Prof. İbrahim İNAN, Scientific Committee |             |   |
| O1   | 11:00-11:15 | Modeling of Electrical Properties of Bi2Sr2Ca1-xZnxCu1.75Na0.25Oy (x = 0.00, 0.0125, 0.025, 0.050 and 0.075) Superconductors<br>M. Ersin Aytekin<br>Department of Mechatronics Processing, Vocational School of Technical Sciences at Mersin Tarsus Organized Industrial Zone, Tarsus University, Tarsus, Türkiye   |



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| O2  | 11:15-11:30 | <p><b>Effects of Noble Metal Alloy Based Magnetic Elements on Nanoparticles and Detailed Investigation</b><br/> <b>Emre Can Tayfun<sup>1</sup>, Mustafa Akyol<sup>2</sup>, Doğan Kaya<sup>1,3</sup>, Faruk Karadağ<sup>1</sup>, Ahmet Ekicibil<sup>1</sup></b><br/> <sup>1</sup>Department of Physics, Faculty of Sciences and Letters, Çukurova University, Adana, Türkiye<br/> <sup>2</sup>Materials Engineering Department, Faculty of Engineering, Adana Alparslan Türkeş Science and Technology University, Adana, Türkiye<br/> <sup>3</sup>Department of Advance Materials and Nanotechnology, Institute of Natural and Applied Sciences, Cukurova University, Adana, Türkiye</p>   |
| O3  | 11:30-11:45 | <p><b>Novel Arc-Melted Ni-Si-M (M = Al, Cu, Co, Fe, Zr) Ternary Alloys: Effects of Additive Elements on Morphology, Mechanical Strength, and Magnetic Performance</b><br/> <b>Sinan Diken<sup>1</sup>, Celal Kursun<sup>2</sup>, Musa Gogebakan<sup>2</sup></b><br/> <sup>1</sup>Department of Physics, Faculty of Science, Kilis 7 Aralık University, Kilis, Türkiye<br/> <sup>2</sup>Department of Physics, Faculty of Art and Sciences, K. Sütçü İmam University, Kahramanmaraş, Türkiye</p>   |
| <b>Lunch</b><br>(12:00-13:00)   |             |   |
| <b>Session III-Plenary Speakers</b><br><i>Chair, Assist Prof. Cevher Ak, Scientific Committee</i> |             |   |
| O4  | 13:00-13:15 | <p><b>Emulsion-Based Strategies for Water-Resistant Biobased Films: A Comparative Evaluation of Contact Angle and Swelling Ratio</b><br/> <b>Sevgin Dıblan<sup>1</sup>, Yasin Özay<sup>2</sup>, Zafer Erbay<sup>3</sup></b><br/> <sup>1</sup>Department of Food Processing, Vocational School of Technical Sciences at Mersin Tarsus Organized Industrial Zone, Tarsus University, Tarsus, Türkiye<br/> <sup>2</sup>Department of Environmental Protection Technologies, Vocational School of Technical Sciences at Mersin Tarsus Organized Industrial Zone, Tarsus University, Tarsus, Türkiye<br/> <sup>3</sup>Department of Food Engineering, Faculty of Engineering, Adana Alparslan Türkeş Science and Technology University, Adana, Türkiye</p> |
| O5  | 13:15-13:30 | <p><b>Impact of Growth Environment on the Controlled Synthesis of 2D Mo<sub>2</sub>C by CVD</b><br/> <b>Zehra Zisan Guler<sup>1</sup>, Nevzat Duman<sup>1,2</sup>, Elif Okay<sup>1</sup>, Goknur Buke<sup>1,3</sup></b><br/> <sup>1</sup>Micro and Nanotechnology, Graduate School of Engineering and Science, TOBB University of Economics and Technology, Ankara, Türkiye<br/> <sup>2</sup>Togg, Powertrain &amp; High Voltage Electronics, Ankara, Türkiye<br/> <sup>3</sup>A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, Pennsylvania, United States</p>  |
| O6  | 13:30-13:45 | <p><b>Investigating Gas Uptake and Electric Field Response of ZIF-71 with Monte Carlo and ab-initio Simulations</b><br/> <b>Ömer Şahin Arsoy, Yeliz Gürdal</b><br/> <sup>1</sup>Department of Bioengineering, Institute of Graduate School, Adana Alparslan Türkeş Science and Technology University, Adana, Türkiye<br/> <sup>2</sup>Department of Bioengineering, Adana Alparslan Türkeş Science and Technology University, Adana, Türkiye</p>  |
| O7  | 13:45-14:00 | <p><b>The New Double Perovskite La<sub>2</sub>TiNiO<sub>6</sub> As Electrocatalyst for Efficient Hydrogen Evolution Reaction</b><br/> <b>Evrin Baran Aydın<sup>1</sup>, Sevgi Ateş<sup>1</sup>, Gökmen Sığircık<sup>2</sup>, Birgül Yazıcı<sup>2</sup></b><br/> <sup>1</sup>Department of Chemistry, Faculty of Science, Kilis 7 Aralık University, Kilis, Türkiye<br/> <sup>2</sup>Department of Chemistry, Faculty of Science and Letters, Çukurova University, Adana, Türkiye</p>  |
| <b>Coffee Break and Poster Session</b><br>(14:00-14:30)   |             |   |
| O8  | 14:30-14:45 | <p><b>Electronic and transport properties of monolayer ZrS<sub>2</sub></b><br/> <b>Berrin Özdemir<sup>1</sup>, Nihal T. Yıldız<sup>2</sup>, H. Cengiz Çekil<sup>1</sup>, M. Akif Sabaner<sup>2</sup>, Ünal Dömekeli<sup>2</sup>, Fikret Işık<sup>2</sup>, Sedat Şengül<sup>2</sup>, Metin Özdemir<sup>1</sup></b><br/> <sup>1</sup>Department of Physics, Faculty of Arts and Sciences, Çukurova University, Adana, Türkiye<br/> <sup>2</sup>Department of Physics, Faculty of Sciences, Trakya University, Edirne, Türkiye</p>   |



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| O9   | 14:45-15:00 | <p><b>Fabrication and characterization of scaffolds with heterogeneous architecture as potential in vitro 3D model for cancer research</b></p> <p><b>Didem Demir Karakuş<sup>1</sup>, Murat İdikut<sup>2</sup>, Sibel Dağlı<sup>3</sup>, Mehmet Tarakçıoğlu<sup>4</sup></b></p> <p><sup>1</sup>Department of Chemistry and Chemical Process Technologies, Tarsus University, Mersin, Türkiye</p> <p><sup>2</sup>Department of Bioengineering, Adana Alparslan Türkeş Science and Technology University, Adana, Türkiye</p> <p><sup>3</sup>Department of Medical Microbiology, Hatay Mustafa Kemal University, Antakya, Türkiye</p> <p><sup>4</sup>Department of Medical Biochemistry, Faculty of Medicine, Gaziantep University, Gaziantep, Türkiye</p> |
| O10  | 15:00-15:15 | <p><b>Enhancing The Mechanical and Barrier Properties of PLA Films: Biocomposite Development Using Tomato Peel Extract</b></p> <p><b>Aysima Yediler, Özlem Kızılırmak Esmer</b></p> <p>Department of Food Engineering, Faculty of Engineering, Ege University, İzmir, Türkiye</p>   |
| O11  | 15:15-15:30 | <p><b>Yeşil Enerji Dönüşümü Sağlayan İleri Teknoloji Malzemelerin Üretiminde Endüstri 5.0 Uygulamalarının Rolü</b></p> <p><b>İbrahim İnan</b></p> <p>Department of Industrial Engineering, Faculty of Engineering, Toros University, Mersin, Türkiye</p>  |
| <p style="text-align: center;"><b>Coffee Break and Poster Session</b><br/>(15:30-15:45)</p>  |             |   |
| <p style="text-align: center;"><b>Session IV-Plenary Speakers</b><br/><i>Chair, Assoc. Prof. Evrim Ersin Kangal, Scientific Committee</i></p>                  |             |   |
| O12  | 15:45-16:00 | <p><b>Mechanical and Thermal Analysis of Carbon Fiber Reinforced Discs under Thermal Loading</b></p> <p><b>Hüseyin Fırat Kayıran<sup>1,2</sup></b></p> <p><sup>1</sup>Mersin Provincial Coordinator, Department of Agriculture and Rural Development Support (ARDSI), Mersin, Türkiye</p> <p><sup>2</sup>Department of Industrial Engineering, Faculty of Engineering, Toros University, Mersin, Türkiye</p>  |
| O13  | 16:00-16:15 | <p><b>Seri üretim teknolojilerinde enerji ve kaynak verimliliği açısından proses hatalarının minimize edilmesi: Preform kalıplarında aşınma ve malzeme performansının iyileştirilmesine yönelik yenilikçi yaklaşımlar</b></p> <p><b>Berk Şahin<sup>1</sup>, Gamze Arslan<sup>1</sup>, Mehmet Yüksel<sup>1</sup>, Gökhan Parsak<sup>1</sup>, Tuğçe Demirdelen<sup>2</sup></b></p> <p><sup>1</sup>Petka Mold Industry, Adana, Turkey</p> <p><sup>2</sup>Department of Electrical and Electronic Engineering, Faculty of Engineering, Adana Alparslan Türkeş Science and Technology University, Adana, Türkiye</p>   |
| O14  | 16:15-16:30 | <p><b>Enhancing CTS Thin Film Characteristics via Graphene Interlayer: Influence of Sulfurization Temperature</b></p> <p><b>Sevda Erkan<sup>1</sup>, Yavuz Atasoy<sup>2</sup>, M. Ali Olğar<sup>1,3</sup>, Recep Zan<sup>1,3</sup></b></p> <p><sup>1</sup>Department of Physics, Niğde Ömer Halisdemir University, Nanotechnology Application and Research Center, Niğde, Türkiye</p> <p><sup>2</sup>Niğde Ömer Halisdemir University, Niğde Zübeyde Hanım Vocational School of Health Services, Niğde, Türkiye</p> <p><sup>3</sup>Department of Physics, Niğde Ömer Halisdemir University, Niğde, Türkiye</p>  |
| O15  | 16:30-16:45 | <p><b>Catalytic and Photocatalytic Properties of NiFe<sub>2</sub>O<sub>4</sub> Nanomaterials</b></p> <p><b>Hasan Işık, İlknur Baldan Işık, Doğan Kaya, Faruk Karadağ, Ahmet Ekicibil</b></p> <p>Department of Physics, Faculty of Sciences and Letters, Çukurova University, Adana, Türkiye</p>   |
| O16  | 16:45-17:00 | <p><b>The Electronic Transport Properties of Monolayer MoS<sub>2</sub></b></p> <p><b>M. Derya Alyörük<sup>1,2</sup>, H. Cengiz Çekil<sup>2</sup>, Berrin Özdemir<sup>3</sup>, Zeki Yazar<sup>4</sup>, Metin Özdemir<sup>3</sup></b></p> <p><sup>1</sup>Department of Physics, Aksaray University, 68100 Aksaray, Turkey</p> <p><sup>2</sup>Department of Medical Services and Techniques, Opticianry Program, Health Services Vocational School, Aksaray University, Aksaray, Turkey</p> <p><sup>3</sup>Department of Physics, Faculty of Sciences and Letters, Çukurova University, Adana, Turkey</p> <p><sup>4</sup>Department of Physics, Faculty of Arts and Sciences, Mersin University, Mersin, Turkey</p>  |
| <p style="text-align: center;"><b>Closing Ceremony</b><br/><b>Ali Kemal HAVARE</b><br/><i>Chair of Scientific Organization Committee, Toros University</i></p> |             |   |

