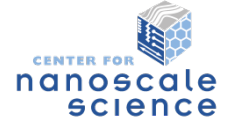
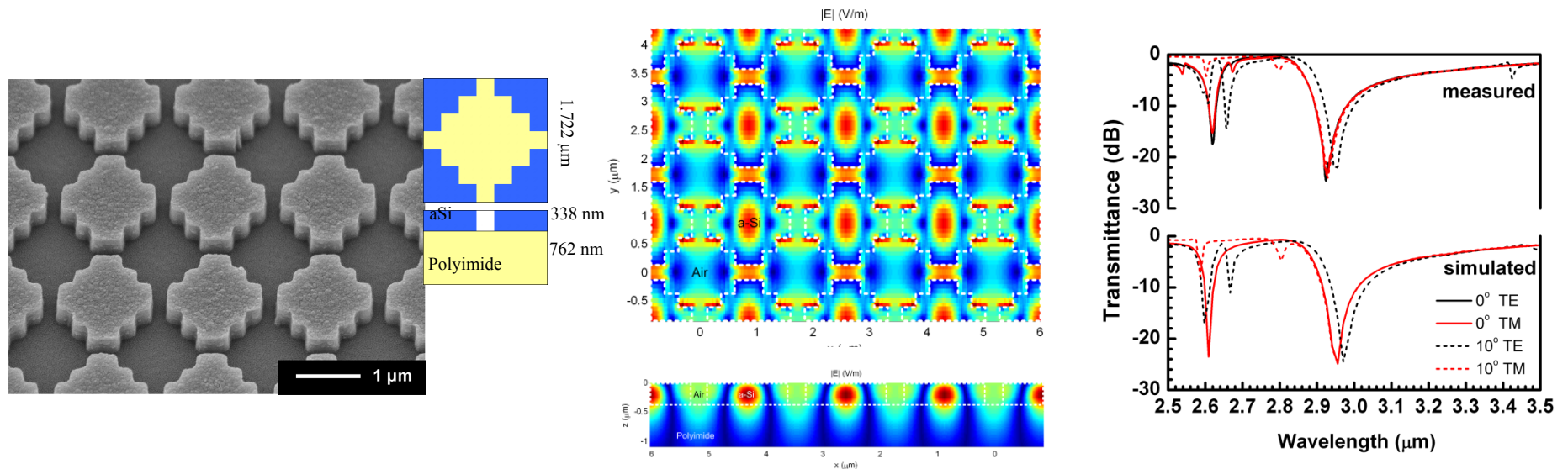


# All-Dielectric Frequency Selective Surfaces with practical fields of view realized through genetic algorithm synthesis



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Frequency selective surfaces are being explored in the infrared as pass and stop band filters. All-dielectric FSS promise reduced losses and sharper resonances in the infrared compared with their metallo-dielectric counterparts, but they suffer from poorer angular stability. MRSEC researchers have demonstrated a new technique for synthesizing such filters with stop bands that possess angular and polarization stability. The example above was optimized by a genetic algorithm to have a stop band at 3  $\mu\text{m}$  with a 10° field of view. The field profile shows that incident waves couple with the structure producing strong fields in the *a*Si layer. The measured transmittance validates the full-wave simulations and synthesis technique.