

Abstract Submitted
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**A Fitting Routine to Obtain Temperature and Relative Spectral
Emissivity from Mixed Material (C, W, Be) Surfaces in PSI Experiments¹**

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Center For Energy Research — A nonlinear least-squares fitting code has been written to fit a black body profile multiplied by a polynomial spectral emissivity to the data from an IR spectroscopy diagnostic on the PISCES-B machine. The result is the absolute surface temperature and the coefficients of the polynomial emissivity. Emissivity measurements are important for thermal balance calculations of first wall materials in ITER, especially under conditions for which mixed materials can be created (e.g., combinations of C, W and Be) for which no other emissivity data are available. A straightforward data-to-theory-function fit is made possible by an intensity calibration using a commercially available illumination source. The raw spectrum has sufficient detail (512 pixels) to see and eliminate atomic line emission and absorption features from the spectrum before fitting. Fitting code details and preliminary experimental data analysis will be presented and discussed.

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