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PAPER TITLE THE DOSIMETRIC CHARACTERISTICS OF THE NEW HARSHAW
HIGH SENSITIVITY, COPPER DOPED LITHIUM FLUORIDE**AUTHOR(S) NAME(S)** R. A. Tawil, M. Ramlo, N. A. Karpov, K. J. Velbeck**SUBMITTING AUTHOR****LAST NAME** TAWIL **FIRST NAME** R. A. **TITLE** Director of
Business Development**AFFILIATION** BICRON NE **TEL** 216/349-6960 ext. 6319**STREET** 6801 Cochran Road **FAX** 216/349-7442**CODE** CITY SOLON, OHIO 44139 **COUNTRY** USA**PRESENTING AUTHOR (IF DIFFERENT)****MAJOR SCIENTIFIC TOPIC NUMBER** .3.2. (see page 7)**ABSTRACT (See instructions overleaf)**

HARSHAW/BICRON♦NE has developed the capability of producing high sensitivity, copper doped, lithium fluoride (LiF:Mg,Cu,P) material for thermoluminescence dosimetry (TLD). This material has been proven to be about twenty times more sensitive than standard lithium fluoride (LiF:Mg,Ti), and it can be produced with ⁷Li, ⁶Li, and natural Li. TL chips made of this high sensitivity lithium fluoride can be mounted in standard four-element cards in either Teflon® or Kapton®. This paper reports the results of the testing done to characterize the dosimetric properties of this material, both as bare elements and in cards. The energy response was found to be relatively flat and fade is negligible. Additional results reported in this paper are detection threshold, reproducibility, batch uniformity, residual signal, linearity, ambient light-induced thermoluminescence and fade, and spectral response. The results of these tests show this high sensitivity material to be an almost perfect material for environmental, personnel, and medical dosimetry applications.