Review of: "Can electromagnetic fields form tensors in a polarizable medium?"

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In this version the inhomogeneous wave equation for the electromagnetic potentials within a material is written in its rest frame. As the driving terms form a 4-vector (the 4-current density) but the resulting wave operator is not a 4-scalar, it follows, the author claims, that the 4-potential is not actually a 4-vector. Thus, the electromagnetic field F^{\mu\nu} is not a 4-tensor and E, B, D, H can not be combined into a tensor in the presence of polarizable and magnetizable matter. I believe the logic of this argument is flawed: It is true that a scalar operator acting on a 4-vector yields a 4-vector, but it doesn' t follow that a non-scalar operator acting on a 4-vector can't yield a 4-vector. The non-scalar operator could be a second rank 4-tensor and as the choice of gauge is not invariant, gauge transformations of the 4-potential are allowed when changing reference frames. Furthermore, the conclusion is wrong, as F^{\mu\nu} yields the 4-force when acting on the 4-velocity of a charged particle, so it is necessarily a second rank 4-tensor, irrespective of the presence of polarizable matter. To conclude anything at all about the tensorial nature of any quantity, that quantity should be considered in a frame-independent way (for example, second rank tensors correspond to bilinear functions that produce a scalar from two vectors, or as linear transformations that produce vectors from other vectors) that may be defined without introducing any reference frames, or it should be shown that their components transform (or not) as the components of scalars, vectors or tensors should. Neither approach is followed in this paper and the wrong conclusion is reached. Thus, my low score for the revised version too.